# DPW AIR-CONDITIONING AND REFRIGERATION PLANTS AND SYSTEMS OPERATIONS AND MAINTENANCE SERVICE CONTRACT GUIDE

U.S. Army Center for Public Works

Fort Belvoir, Virginia

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# DPW A/C AND REFRIGERATION PLANTS AND SYSTEMS SERVICE CONTRACT GUIDE

U.S. Army Center for Public Works Fort Belvoir, Virginia

FOREWORD

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This guide is designed to help installations develop acquisition packages for A/C and Refrigeration Plants and Systems. Additional, supplemental guidance is contained in the U.S. Army Center for Public Work's DPW Service Contract Guide (P-10), dated April 1992.

This guide is formatted in accordance with (IAW) the Uniform Contract Format (UCF) prescribed by the Federal Acquisition Regulation (FAR) to help DPW performance work statement (PWS) writers and contracting officers assemble complete acquisition packages. It is divided into the following four parts:

PART I - THE SCHEDULE

PART II - CONTRACT CLAUSES

PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

PART IV - REPRESENTATIONS AND INSTRUCTIONS

Each part has specific sections which contain information, instructions and examples pertaining to the development of a complete A/C and Refrigeration Plants and Systems Service Contract acquisition package. Special emphasis has been placed on PART I - SECTION C, Description/Specifications. Examples of Performance Work Statements (PWS) have been developed from an assortment of recent installation A/C and refrigeration plants

and systems maintenance contracts.

Use of this guide should result in an acquisition package containing performance oriented work statements which are clear, concise, comprehensive, and relatively easy to administer and monitor once they are contracted. Recommendations or suggestions for improvement are welcomed. For more information contact:

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The humankind pronoun he and other gender-specific terminology used throughout this manual are applied in the general sense of mankind and are intended to include both males and females.

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# INTRODUCTION

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1. Background:

a. During the next several years, Army facility funds will continue to be cut to reduce budget deficits. This means that Operations and Maintenance (O&M) dollars must be spent where they will do the most good. There will be less funding available for correcting unwise decisions and deficiencies in contracts. Managers will remain responsible to the Commander to ensure that the mission is accomplished. Further, these managers will not likely be relieved of their responsibility by virtue of contracting out the work.

b. Performance Work Statement (PWS) writers and all others involved in contractual matters have a responsibility to develop the best possible acquisition packages. They also have a duty to utilize the most efficient methods within available resources. Incorporating these practices right from the start will help prevent future problems; therefore, the purpose of this guide is to implement effective procedures.

2. How_to_Use_This_Guide:

a. This guide follows the Uniform Contract Format (UCF). This format covers SECTIONS A through M, each of which comprise standard subject matter pertaining to Air-Conditioning and Refrigeration Plants and Systems Operations and Maintenance

Service Contracts. The guide is designed to give PWS writers detailed instructions on the content to be inserted in each section using UCF.

b. Users of this guide will see the phrase NOTE_TO_WRITER throughout the narrative. When this phrase appears, instructions to PWS writers will clarify, expand upon, or recommend changes to the standard statements or other information provided, so that requirements peculiar to an individual installation can be addressed. These notes, where they are included, should be carefully read in the context of the surrounding guide paragraphs to gain a clear understanding of their meaning and intent.

c. Users will quickly become aware that contract terms and language, which are mainly derived from the Federal Acquisition Regulations (FAR), are used throughout this guide. The purpose of their use is twofold; first, to allow managers to develop a PWS in appropriate contract "language" that states exactly what the DPW requires; second, to educate DPW users in contract terminology and Directorate of Contracting (DOC) users in DPW functions.

d. The following is a listing of specific examples contained in this guide:

3. Preparation_of_This_Guide:

This DPW Air-Conditioning and Refrigeration Plants and Systems Operations and Maintenance Service Contract Guide was prepared for and under the direction of US Army Center for Public Works (USACPW) formerly US Army Engineering and Housing Support Center (USAEHSC), Fort Belvoir, Virginia by Dewberry & Davis, Fairfax, Virginia. Reference U.S. Army Corps of Engineers, Baltimore District, Contract No. DACA31-91-D-0018, Delivery Order 0013. CECPW-FM has incorporated the descriptions or specifications into a DPW Air-Conditioning and Refrigeration Plants and Systems Operations and Maintenance Service Guide, reference number G-10.

SECTION A

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SOLICITATION/CONTRACT FORM

1. General_Information: The first page of a solicitation for a A/C and Refrigeration Plants and Systems Service Contract is prepared by the installation's Directorate of Contracting (DOC). Standard Form 33 (SF33) is normally the first page of the solicitation.

2. Instructions: The PWS writer is not required to prepare this section of the solicitation. It is included to provide a sample of what a complete solicitation package should look like.

3. Example: An example of a typical SF33 is provided on the following page.

SECTION B

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SUPPLIES OR SERVICES AND PRICE

1. General_Information: This section is prepared by the DPW Performance Work Statement writer. The section contains a brief description of the supplies or services; e.g. line item number, national stock number or part number. If applicable, the title or name identifying the supplies or services and quantities are also entered in this section. Optional Form 336 (OF 336) may be used if available.

NOTE_TO_WRITER: For more detailed information, see Part 10, "Specifications, Standards, and other Purchase Descriptions," Part 42, "Contract Administration," and Part 53, "Forms" of the FAR.

2. Instructions:

a. SECTION B - Supplies or Services and Prices/Costs of a contract are usually referred to as the "Bid Schedule." This schedule is used to establish contract unit prices and is used as a basis for establishing reductions to payments in the event a Contractor fails to perform. Prices for a service can be extremely difficult to define and measure. A service may have a few or many separate tasks which must be performed in order to accomplish the requirement. Due to the difficulties in measuring costs, service contract solicitations normally require

only a bottom-line price. This bottom-line price is used as a basis in cost comparisons. In an Invitation for Bid (IFB), a prospective Contractor is required to submit only a bottom line price, if that bottom-line price includes the provision of all specified requirements. When a breakout of costs is required for contract administration purposes, the PWS writer should provide the Contracting Officer with a recommended method for such breakout, based on minimum functional requirements. The PWS writer should recommend a bid schedule that itemizes costs to determine how reductions can be made; e.g., replacing specific air conditioning units, heat pumps, air handlers, (specify size), thermostates, breaker panels, and etc. The PWS writer should use the numbering system described in DFARS Subpart 4.71, as illustrated in this guide. If this numbering system is not used, a system that indicates line and subline designations may be adequate since the DOC will transfer the information to standard forms.

b. The Contracting Officer is responsible for determining the type of contract to be used (e.g., fixed-price or cost-plus). For Real Property Maintenance Activities (RPMA), success in contracting will depend heavily on the writing skills of the PWS writer. However, the DPW staff must be prepared to give the Contracting Officer prompt and complete support, including assistance in price negotiations.

c. For any services contract, the PWS writer should include the following bid schedule information:

(1) A brief description of the service(s) being acquired;

(2) Any provision for the quantity of work or frequency of performance; Information contained in SECTIONS C, D, E, and F, relating to specific line items, should be sufficiently referenced in SECTION B to ensure that potential bidders will not omit any item of cost. SECTION B should, therefore, establish a mechanism for complete and thorough pricing.

d. If ongoing service contracts are to be included in the solicitation upon their expiration, then the "units" column should reflect the correct number of intervals that the selected service is to be provided. Further, seasonal services such as preventive maintenance on A/C systems/operations should not be spread over a full year. Such items should be defined in the "units" column only for the appropriate periods of performance. This will assist in preventing potential performance problems for work not performed, or performed during inappropriate times and conditions. Estimated requirements (nonrecurring work ordered only as needed) must be forecast as accurately as possible in the bid schedule.

e. Unit costs should include all applicable overhead and

profit. Requirements may be priced on a variety of unit rates (e.g., linear feet, air-conditioner size, cooling towers (type and size) ventilating systems (type and size) dependent upon the services required. The PWS writer should determine the best pricing method to meet the installation's need. The Contracting Officer will, in most instances, include standard clauses concerning limitations on ordering and possible adjustments for contract prices, based on percentages of increase or decrease from estimated quantities, or other unforeseen conditions or circumstances.

f. Potential Contractors should be furnished with or directed to historical data that may be reviewed and copied if desired. This data may either be provided in SECTION B or may be provided as an attachment. If lengthy, an attachment can be used and referenced in SECTION J. Historical information is normally public information that should be provided to all potential bidders. The historical information should cover a three (3) year period if available. The PWS writer should identify nonrecurring or infrequent items of work by category or function if possible. Bidders should be cautioned that historical information is provided only as an aid and may not reflect the true costs that a Contractor will encounter. Failure to caution Contractors in this way may lead to claims against the Government.

g. The Contractor's responsibilities and the work level definitions contained in SECTION H should not be identified to either the Davis/Bacon or Service Contract Acts. Work levels are developed only to show a clear and concise method to separate functions and the costs of performing work and to insure that the successful Contractor cannot pick or choose work to be performed.

h. The PWS writer should identify all facilities and equipment that will be operated and maintained under the contract, including known projected changes. The PWS writer should specify frequencies of operation and maintenance where applicable. Also, the PWS writer should define, to include any limitations, work authorization documents used in local installation procedures. Nonrecurring or intermittent work may be projected as a percentage factor against total contract price. Bidders should be required to project their own labor to perform recurring operations except for those functions that are estimated by the writer in the indefinite delivery portions of the contract. Information of this type that has been widely distributed without protection normally should not be withheld from any bidder. Any information identified as potentially exempt from public review should be marked "FOR OFFICIAL USE ONLY".

i. Bidders should be cautioned that volume of work histories

should not influence bids since such work might not be awarded to the Contractor in the same quantities.

3. Example: Following is a partial example of a bidding schedule for A/C and refrigeration plants and systems services. It should be modified as needed to meet installation requirements.

UNIT PRICE SCHEDULE
PART I
SECTION B. SUPPLIES/SERVICES AND PRICES/COSTS

| Item No | Item Description | Quality | Unit | Unit Cost | Total Cost |
|---|---|---|---|---|---|
| 0010 | AIR-CONDITIONING & REFRIGERATION PLANTS AND SYSTEMS OPERATIONS, MAINTENANCE AND REPAIR | | | | |
| 0010AA | Inspect, maintain & operate air-conditioning systems. Level I | 12 | MO. | $_____ | $_____ |
| 0010AB | Inspect, maintain & operate refrigeration plants and systems. Level I | 12 | MO. | $_____ | $_____ |
| 0010AC | Inspect, maintain & repair instrument and control systems. Level I | 12 | MO. | $_____ | $_____ |
| 0010AD | Water treat closed loop systems. | | EA. | $_____ | $_____ |
| 0010AE | Water treat, cooling towers (greater than 150 ton capacity). | | EA. | $_____ | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| 0010AF | Water treat, cooling towers (between 50 and 150 ton capacity). | | EA. | $_____ | $_____ |
| 0010AG | Water treat, cooling towers (less than 50 ton capacity). | | EA. | $_____ | $_____ |
| 0010AH | Replace the following requirements: | | | | |
| | a. Instrument and control systems. | | EA. | $_____ | $_____ |

UNIT PRICE SCHEDULE
PART I
SECTION B. SUPPLIES/SERVICES AND PRICES/COSTS

| Item No | Item Description | Quality | Unit | Unit Cost | Total Cost |
|---|---|---|---|---|---|
| 0010 | AIR-CONDITIONING & REFRIGERATION PLANTS AND SYSTEMS OPERATIONS, MAINTENANCE AND REPAIRS | | | | |
| | b. Cold storage facilities. | | EA. | $_____ | $_____ |
| | c. Refrigeration equipment. | | EA. | $_____ | $_____ |
| | d. Liquid chillers and compressors. | | EA. | $_____ | $_____ |
| | e. Evaporative coils, chilled water coils, and coolers. | | EA. | $_____ | $_____ |
| | f. Air-cooled condensers | | EA. | $_____ | $_____ |
| | g. Evaporative condensers | | EA. | $_____ | $_____ |
| | h. Evaporative air coolers. | | EA. | $_____ | $_____ |
| | i. Ventilating systems. | | EA. | $_____ | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| 0010AI | Replace air compressors and air drying equipment. | | EA. | $_____ | $_____ |
| 0010AJ | Replace water coolers and ice machine equipment. | | EA. | $_____ | $_____ |
| 0010AK | Replace food service refrigeration equipment. | | EA. | $_____ | $_____ |

UNIT PRICE SCHEDULE
PART I
SECTION B. SUPPLIES/SERVICES AND PRICES/COSTS

| Item No | Item Description | Quality | Unit | Unit Cost | Total Cost |
|---|---|---|---|---|---|
| 0010 | AIR-CONDITIONING & REFRIGERATION PLANTS AND SYSTEMS OPERATIONS, MAINTENANCE AND REPAIR | | | | |
| 0010AL | Replace domestic refrigeration equipment. | | EA. | $_____ | $_____ |
| 0010AM | Replace vacuum equipment. | | EA. | $_____ | $_____ |
| 0010AN | Replace air moving equipment. | | EA. | $_____ | $_____ |
| 0010AO | Replace toxic exhaust ventilation systems. | | EA. | $_____ | $_____ |
| 0010AP | Replace computer system components. | | EA. | $_____ | $_____ |
| 0010AQ | Replace electric and pneumatic control equipment. | | EA. | $_____ | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| 0010AR | Replace air conditional equipment 5 ton and less. | | EA. | $_____ | $_____ |
| 0010AS | Replace air conditional equipment 6 ton to 25 ton. | | EA. | $_____ | $_____ |
| 0010AT | Replace air conditional equipment 26 to 100 ton. | | EA. | $_____ | $_____ |

UNIT PRICE SCHEDULE
PART I
SECTION B. SUPPLIES/SERVICES AND PRICES/COSTS

| Item No | Item Description | Quality | Unit | Unit Cost | Total Cost |
|---|---|---|---|---|---|
| 0010 | AIR-CONDITIONING & REFRIGERATION PLANTS AND SYSTEMS OPERATION, MAINTENANCE AND REPAIR | | | | |
| 0010AU | Replace climate control chambers. | | EA. | $_____ | $_____ |
| 0010AV | Replace CO2-type refrigeration equipment. | | EA. | $_____ | $_____ |
| 0010AW | Replace Cascade-type refrigeration equipment. | | EA. | $_____ | $_____ |
| 0010AX | Replace constant temperature & humidity control equipment. | | EA. | $_____ | $_____ |
| 0010AY | Replace heat and humidity controlled oven equipment. | | EA. | $_____ | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| 0010AZ | Replace cooling tower equipment. | | EA. | $_____ | $_____ |
| 0010BA | Replace energy monitoring control system (EMCS) | | EA. | $_____ | $_____ |
| 0010BB | Perform A/C shutdowns | | EA. | $_____ | $_____ |
| 0010BC | Perform A/C startups | | EA. | $_____ | $_____ |

UNIT PRICE SCHEDULE
PART I
SECTION B. SUPPLIES/SERVICES AND PRICES/COSTS

| Item No | Item Description | Quality | Unit | Unit Cost | Total Cost |
|---|---|---|---|---|---|
| 0010 | AIR-CONDITIONING & REFRIGERATION PLANTS AND SYSTEMS OPERATION, MAINTENANCE AND REPAIR | | | | |
| 0010BD | Perform preventive maintenance on cooling towers. | | EA. | $_____ | $_____ |
| 0010BE | Perform preventive maintenance on refrigeration equipment. | | EA. | $_____ | $_____ |
| 0010BF | Perform preventive maintenance on ice machines. | | EA. | $_____ | $_____ |
| 0010BG | Perform preventive maintenance on freezer chests and walk-ins. | | EA. | $_____ | $_____ |
| 0010BH | Perform preventive maintenance on air cleaning devices. | | EA. | $_____ | $_____ |

| | | | | | | |
|---|---|---|---|---|---|---|
| 0010BI | Perform preventive maintenance on evaporative cooling for drip-type and rotary-drum coolers. | | EA. | $_____ | $_____ |

UNIT PRICE SCHEDULE
PART I
SECTION B. SUPPLIES/SERVICES AND PRICES/COSTS

| Item No | Item Description | Quality | Unit | Unit Cost | Total Cost |
|---|---|---|---|---|---|
| 0010 | AIR-CONDITIONING & REFRIGERATION PLANTS AND SYSTEMS OPERATION, MAINTENANCE AND REPAIR | | | | |
| | All services less than (specify value) $400 in materials and less than (specify manhours) 16 man hours labor per tasks required to maintain and repair A/C and refrigeration plants and systems, will be accomplished IAW the specifications for the amount bid per service order. This amount excludes those items listed in Clin 0010AA thru 0010BI that shall be accopmlished at separate unit prices. The service priorities are as follows: | | | | |
| 0010BJ | Perform emergency response and repair. | | EA. | $_____ | $_____ |
| 0010BK | Perform urgent response and repair. | | EA. | $_____ | $_____ |
| 0010BL | Perform routine response and repair. | | EA. | $_____ | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| | All services in Clin 0010BJ thru 0010BL over (specified value) $400 value in materials or over 16 manhours labor per task required to be performed for A/C and refrigeration plants and systems shall be accomplished IAW the specification on a unit price basis as specified below: | | | | |
| 0010BM | Labor cost for each task shall be reimbursed on a unit price per manhour basis during normal work hours to include all overhead and profit. | | MH. | $_____ | $_____ |
| 0010BN | Labor cost for each task shall be reimbursed on a unit price per manhour basis for emergency work performed during non-working hours to include all overhead and profit. | | MH. | $____ | $_____ |
| 0010BO | Material costs shall be reimbursed at the actual cost shown on the purchase invoice. | Total Contract Not to Exceed | | EST | $_10,000.00__ |

| | | | | | |
|---|---|---|---|---|---|
| 0010BP | Equipment required to perform this work shall be reimbursed at the actual cost of rental as shown on the rental invoice. | Total Contract Not to Exceed | | EST | $__4,000.00__ |
| | TOTAL CONTRACT AMOUNT | | | | $_____ |

SECTION C

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DESCRIPTIONS/SPECIFICATIONS

1. General_Information:

a. The PWS writer should include a sufficient description of all services to be furnished by the Contractor. References to any Federal or military specifications or commercial specifications or standards should include an identification of all applicable amendments or revisions. Care should be taken when referenced specifications contain alternatives that do not meet the installation's need. In such cases, the PWS writer must prepare an exception clause to the specification being used. Federal or military specifications should not be used if commercial standards or performance-oriented statements will meet the need. (Ref. FAR Subpart 14.2, DFARS 214.2, and AFARS 14.2, as applicable.)

b. The PWS writer should specify needs in a manner designed to promote full and open competition. Specifications and purchase descriptions should be stated in terms of: (1) Function, so that a variety of products or services may qualify; (2) Performance, including specifications of the range of acceptance characteristics or of the minimum acceptable standards; or (3) Design requirements. Requirements should be stated in terms of functions to be performed or performance required.

c. The PWS writer should not include references to Contractor experience, legal or administrative contract clauses or solicitation provisions in the specifications of work sections (the technical portion) of the PWS. Experience does not relate to a Contractor's responsibilities to perform a function.

d. Definitions of "Contracting Officer" and "Contractor" in Uniform Contract Format (UCF) clauses should normally include their representatives, working within specific limitations. For contract purposes, the use of terms such as Contracting Officer Representative (COR), Quality Assurance Evaluator (QAE), Project Manager (PM), etc., should be used only where absolutely necessary (i.e., use Contracting Officer or Contractor instead) in technical statements. Administrative documents which affect, but are not part of the contract, e.g., contract administration plan, letters of designation, etc., should reflect the applicable COR, QAE, etc., terms. Also, use "the contract" or "contract" in statements rather than "this PWS" or "these specifications." However, it should be recognized that a contract will not exist until it is awarded by the Contracting Officer.

e. A repetitive statement of requirements will lead to ambiguity and should be avoided. If appropriate, information should be cross-referenced rather than repeated.

f. PWS writers are urged to use care when using the words "clause" or "provision." The definition of a "provision" applies only to a solicitation and only prior to contract award. (Ref. FAR Subpart 52.101, DFARS 252.101, and AFARS 52.101)

2. Instructions:

a. By definition, the PWS is a performance-oriented technical description of tasks to be accomplished within specified time limits and according to acceptable levels of quality. The technical description of work must be sufficiently accurate to foster competitive bids or proposals for complete and satisfactory accomplishment of the work.

(1) The PWS describes only that work necessary for functional accomplishment and provides the description of tasks common to the work necessary for functional accomplishment.

(2) The PWS ensures work is accomplished to acceptable standards and that the mission is accomplished.

b. Once a job analysis has identified tasks to be performed in sufficient detail to support the type of contract selected, writing the actual PWS should be relatively straightforward. Using a format, language, and a writing style which express the requirement in clear, simple, and unambiguous terms is all that remains. Standard commercially applied terms and statements should be used, if available.

c. The PWS should define and express each item of work so that contractual requirements are met without advantage or disadvantage for the Government or the Contractor. The following considerations should be upheld when writing a PWS.

(1) Style - Include all essential information in its simplest form.

(2) Language - It must be clear, exact, concise, and unambiguous.

(3) Ambiguity - Avoid terms that are indefinite, have double meaning or otherwise may lend themselves to multiple interpretations. The following are examples of ambiguous words and phrases: To the satisfaction of the Contracting Officer.

As determined by the Contracting Officer.

As directed by the Contracting Officer.

All reasonable requests of the Contracting Officer shall complied with.

Good workmanship.

Good working order.

Installed in a neat and workmanlike manner.Workmanship shall be of the highest quality. In accordance with best commercial practice. In accordance with best engineering practice.

In accordance with applicable published specifications.

Skillfully fitted.

Securely mounted.

Properly assembled.

Carefully performed.

Good materials.

High quality.

Suitably housed.

Neatly finished.

Practically free.

Smooth surfaces.

Pleasing lines.

Convenient to operate.

Within easy reach of the operator.

Where practical.

Suitably finished.

Excessive use.

Reasonably clear.

Undesirable odor.

Major construction.

Minor construction.

Minimally.

Maximum.

Established practices.

Any word, or series of words, which can be interpreted in more than one way.

(4) Misused Words and Phrases - An intended meaning is often changed through misuse of words and phrases (e.g., the word "shall" specifies a binding provision. "Will" expresses action on the part of the Government). Attention should be paid to correct definitions of terms.

(5) Spelling - Use standard spelling of words.

(6) Punctuation - Use simple, short, and concise sentences, keeping punctuation to a minimum.

(7) Abbreviations - Use only after showing in parentheses immediately following the first use of the full word or phrase.

(8) Sentences - Clarity is the overriding requirement for sentences.

(9) Paragraphs - State a simple idea and elaborate on it.

d. Requirements placed on the Contractor for submission of data, forms, and reports should be included as an exhibit or attachment. This generally consists of items listed on DD Form 1423, Contract Data Requirements List, or other locally implemented forms. Data items described on DD Form 1664, Data Item Description, or other local forms may also be part of an exhibit or attachment.

e. The installation must establish an audit trail for workload. The following methods are ways to establish and document workload data that will be generally acceptable in an audit situation.

(1) A complete and correct inventory listing of all facilities and equipment that will be operated and maintained by the Contractor should be developed. The listing should show quantities, sizes, age, condition, and other information that will effect the costs to operate and maintain these facilities and equipment. This information should be incorporated into the solicitation as a technical exhibit.

(2) A good preventive maintenance (PM) program as outlined by DODI 4165-64, 23 May 1985 should be developed. The PM program should establish frequencies of inspection and PM operations. This program should be incorporated into the solicitation as a technical exhibit. NOTE_TO_WRITER: The Government must develop a list of all recurring preventive maintenance requirements (see DODI 4165-64, 23 May 1985). The list should include the following.

Descriptions of work to be accomplished.

Frequency for accomplishing the work.

Locations of work.

Any special requirements related to the work.

f. The UCF is usually used in developing the PWS. The following paragraphs will typically be included in SECTION C for a solicitation and any resulting contract:

C.1 SCOPE: Provides a broad overview of the work requirements, personnel matters and, most important, contains a section that

states clearly the Contractor's specific responsibility for quality control. (See para. C.1, page C-46 for examples.) The scope usually contains the following subparagraphs:

C.1.1 Background_Information: NOTE_TO_WRITER: Contractors tend to provide better services if they understand the context in which the service is being performed. However, the information should be limited to no more than two (2) pages. Each DPW must develop its own data based on its own historical background and mission. (Ref. DA Pamphlet 420-8). Concise summary information regarding site locations, climate, soils, environmental considerations can typically be found in the installation's master plan narrative report.

C.1.2 Location_(or_Locations): Identify location where work is to be performed. Include location map as a technical exhibit.

C.1.3 Climatic_Conditions: Identify prevailing climatic conditions to include annual rainfall, annual snowfall, wind directions, etc.

C.1.4 Installation_History_and_Mission_Statement: Insert applicable historical information.

C.1.5 Directorate,_of_Public_Works_(DPW): Insert any desired information pertaining to DPW functions, organizational structure, addresses, and points-of-contact data.

C.1.6 Facilities_Descriptions: Insert necessary descriptions from the installation Resources Management Plan. (Ref. DA Pamphlet 420-8)

C.1.7 Functions_Covered_Under_the_Contract: List all functions that will be contracted and, if applicable, expand to include all major facilities.

C.2 Definitions: As used throughout the contract, the following terms shall have the meaning set forth below: NOTE_TO_WRITER: Delete any definitions or acronyms that are not used in the installation PWS. The PWS writer should incorporate all definitions in one paragraph or attachment. Acronyms should also be defined. AR 310-50, "Authorized Abbreviations and Brevity Codes," (etc.) may be referenced. Referenced documents containing applicable definitions must be made available to potential bidders if requested. Where only a reference is given, the DPW is expected to develop the definition using the reference as a guide.

C.2.1 Acceptable_Quality_Level_(AQL): The maximum percent defective (or the maximum number of defects per 100 units) that can be considered as a satisfactory performance average. The Contracting Officer will accept the majority of lots provided that the percent defective (or defects per 100 units) in these lots is no greater than the designated value of AQL. However, the Contractor shall not intentionally perform in a defective

manner and shall reperform any service found to be defective whenever possible. Decisions as to possibility of reperformance shall be made only by the Contracting Officer.

C.2.2 Acronyms: Standard abbreviations needed to identify technical items, proper names or organizations. A list of acronyms follows. The PWS writer should delete or include additional acronyms as applicable.

ACRONYMS

| | |
|---|---|
| AAFES | U.S. Army and Air Force Exchange Service |
| AASHTO | American Association of State Highway and Transportation Officials |
| ABMA | American Boiler Manufacturers Association |
| ACI | American Concrete Institute |
| ACO | Administrative Contracting Officer |
| AFARS | Army Federal Acquisition Regulation Supplement |
| AGA | American Gas Association |
| AI | The Asphalt Institute |
| ANSI | American National Standards Institution |
| API | American Petroleum Institute |
| AQL | Acceptable Quality Level |
| ARD | Automatic Release Date |
| AREA | American Railway Engineering Association |
| ARI | Air-Conditioning and Refrigeration Institute |
| ASA(IL&E) | Assistant Secretary of the Army (Installations, |

| | |
|---|---|
| | Logistics, and Environment) |
| ASAE | American Society of Agriculture Engineers |
| ASCE | American Society of Civil Engineers |
| ASHRAE | American Society of Heating, Refrigerating and Air-Conditioning Engineers |
| ASL | Authorized Stockage List |
| ASME | American Society of Mechanical Engineers |
| ASSE | American Society of Sanitary Engineers |
| ASTM | American Society for Testing and Materials |
| AVD | Automatic Vent Damper |
| AWWA | American Water Works Association |
| BTU | British Thermal Unit |
| BTUH | British Thermal Units per Hour |
| CDR | Contract Discrepancy Report |
| CO | Carbon Monoxide |
| CO2 | Carbon Dioxide |
| COCO | Contractor-Owned, Contractor-Operated |
| COE | Chief of Engineers |
| CONUS | Continental United States |
| COR | Contracting Officer Representative |
| DA | Department of the Army |
| DEAE | Diethylaminoethanol |
| DPW | Directorate, of Public Works |
| DEPPM | Defense Energy Program Policy Memorandum |

| | |
|---|---|
| DFARS | Defense Federal Acquisition Regulation Supplement |
| DFSC | Defense Fuel Supply Center |
| DOC | Directorate of Contracting |
| DOD | Department of Defense |
| DPI | Data Processing Installation |
| ECIP | Energy Conservation Investment Program |
| EMCS | Energy Monitoring and Control System |
| EPA | Environmental Protection Agency |
| F | Degrees Fahrenheit |
| F&T | Float and Thermostat |
| FAO | Finance and Accounting Office(r) |
| FESS | Facilities Engineering Supply System |
| FIA | Factor Insurance Association |
| FIA | Financial Inventory Accounting |
| FOA | Field Operating Activity |
| FM | Factory Mutual |
| FOB | Free on Board |
| fpm | Feet per minute (measure of velocity) |
| FSC | Federal Supply Class |
| GFE | Government-Furnished Equipment |
| GFP | Government-Furnished Property |
| GOCO | Government-Owned, Contractor-Operated |
| gph | Gallons per hour |

| | |
|---|---|
| GVW | Gross Vehicular Weight |
| H2 | Hydrogen |
| HND | U.S. Army Corps of Engineers, Huntsville Division |
| HQDA | Headquarters, Department of the Army |
| HRI | Heat Recovery Incinerator |
| HRT | Horizontal Return Tubular |
| HTHW | High Temperature Hot Water |
| HTW | High Temperature Water |
| HVAC | Heating, Ventilating, and Air-Conditioning |
| HW | Hot Water |
| IAW | In Accordance With |
| LCCA | Life-cycle Cost Analysis |
| IFDEP | Integrated Facilities Data Entry Process |
| IFS-M | Integrated Facilities System-Micro |
| IJO | Individual Job Order |
| IPD | Issue Priority Designator |
| IPS | Iron Pipe Size |
| IRR | Internal Rate of Return |
| JCAH | Joint Commission on Accreditation of Hospitals |
| JOR | Job Order Request |
| KO | Contracting Officer |
| LIN | Line Item Number |
| LP | Liquefied Petroleum |

| | |
|---|---|
| LPG | Liquefied Petroleum Gas |
| M&S | Maintenance and Service |
| MACOM | Major Army Command |
| MBTU | MEGA British Thermal Unit |
| MBTUH | MEGA British Thermal Unit per Hour |
| MCA | Military Construction, Army |
| MCAR | Military Construction, Army Reserve |
| mil | One thousandth of an inch |
| MISO | Management Information Systems Office |
| MMCAR | Minor Military Construction, Army Reserve |
| MSCP | Military Service Control Point |
| NAF | Nonappropriated Funds |
| NEMA | National Electrical Manufacturers Association |
| NFPA | National Fire Protection Association |
| NSN | National Stock Number |
| O&M | Operation & Maintenance |
| O2 | Oxygen |
| OCAR | Office, Chief of Army Reserve |
| OCE | Office, Chief of Engineers |
| OCONUS | Outside Continental United States |
| OMA | Operations and Maintenance, Army |
| OMAR | Operations and Maintenance, Army Reserve |
| OMB | Office of Management and Budget |
| OPA | Other Procurement Army |

| | |
|---|---|
| OST | Order and Shipping Time |
| PDO | Property Disposal Office(r) |
| POL | Petroleum, Oils and Lubricants |
| ppm | Parts per million |
| PRV | Pressure Reducing Valve |
| psi | Pounds per square inch |
| psia | Pounds per square inch, absolute |
| psig | Pounds per square inch, gauge |
| PVC | Polyvinyl Chloride |
| QA | Quality Assurance |
| QAE | Quality Assurance Evaluator |
| QASP | Quality Assurance Surveillance Plan |
| QC | Quality Control |
| QCP | Quality Control Program |
| RDD | Required Delivery Date |
| RDF | Refuse Derived Fuel |
| RDTE | Research, Development, Test and Evaluation |
| RF | Radio Frequency |
| RH | Relative Humidity |
| RPMA | Real Property Maintenance Activity |
| RR | Reliability Rate |
| SAACONS | Standard Army Automated Contracting System |
| SAILS | Standard Army Intermediate Level Supply System |
| SMACNA | Sheet Metal and Air Conditioning Contractors' |

National Association

| | |
|---|---|
| SO | Service Order |
| SOO | Standing Operations Order |
| SOP | Standard Operating Procedure |
| SSSS | Self-Service Supply Section |
| STANFINS | Standard Financial Systems |
| TAMMC | Theater Army Materiel Management Center (USAREUR) |
| TB | Technical Bulletin |
| TDA | Table of Distribution and Allowance |
| TM | Technical Manual |
| TOE | Tables of Organization and Equipment |
| UL | Underwriters Laboratories, Inc. |
| URR | Unconstrained Requirements Report |
| USACPW | U.S. Army Center for Public Works |
| USPFO | United States Property and Fiscal Officer |

NOTE_TO_WRITER: When words such as adequate, properly, major, minor, etc., are used, they must be defined as such wording is subject to interpretation. Words such as "as specified" apply only when the item is in fact specified. After award, a Contractor will protest any work or service falling into categories such as "as required," "as necessary," etc. Be specific and state exactly what the Contractor is to do. Do not state what Government will not do except where absolutely

necessary. The use of acronyms can make complex terms easy and precise. However, Contractors not familiar with Government contracts may not understand them. Acronym must be spelled out the first time used, followed by the acronym in parentheses. The above list includes acronyms often used in DPW contract preparation. AFARS 16.9003 (b) (3) prohibits open-end phrases such as "include, but not limited to" and generalized references to studies, services, or products without specific descriptions being incorporated into the work statements. "As directed by the Contracting Officer" is another example of such open-end phrases which should be limited in use as such words indicate unknowns which Contractors could not price. Using such wording will cause Contracting Officers to conclude DPW does not actually know what work is required and will normally result in a decision to use a cost plus type contract.

C.2.3 As_Is: Means without additional maintenance or repair expense solely for the purpose of transfer to the Contractor.

C.2.4 Breakdown: The stoppage or collapse of equipment of a facility, or a component thereof, that requires immediate corrective action to restore it to an operating condition.

C.2.5 Clean: As used generally, means removal of dirt or impurities. As used for acceptance of work, means gleaming, bright, free from dirt, contamination or impurities, unsoiled,

unstained, recently laundered, fresh and unused, neat and tidy, having no flaws or roughness, clear, regular, or having few corrections.

C.2.6 Contract_Discrepancy_Report_(CDR)_DA_Form_5479-R: A formal, written documentation of Contractor nonconformance or lack of performance for contracted work.

C.2.7 Critical_Equipment_and_Facilities: Equipment or facilities that must operate continuously or throughout the respective season in order to support critical missions. Failure of equipment or facilities in meeting design output requirements may affect the health and welfare of personnel or damage Government equipment or properties. Emergency or urgent service calls are often required to restore critical equipment to optimum operating condition and provide the output required, e.g., computer facilities, 24-hour operations (specify), fire prevention and protection facilities, hospitals, electrical plants/systems, water plants/systems, etc.

C.2.8 Equipment_Logbook: A mandatory record of the events occurring during the life cycles of Government equipment made IAW DA Pam 738-750, "The Army Maintenance Management System (TAMMS)." The Contractor shall comply with TAMMS documentation requirements as applicable to each item of Government-furnished equipment (GFE).

C.2.9 Expendable/Nonexpendable:

C.2.9.1 Expendable: Government property that is consumed in use or loses its identity in use and is dropped from stock record accounts when issued. Expendable items include certain repair parts of low intrinsic value or items unworthy of full accounting procedures, e.g., paint, fuel, cleaning and preserving materials, or items which lose their identity (such as spare parts, which are sometimes referred to as "consumable supplies and material").

C.2.9.2 Nonexpendable: Government property or supplies which are not consumed in use and which retain their original identity during the period of use, such as machines and tools.

C.2.10 Facility_Replacement: The replacement of an entire facility when replacement is more economical than major repair. This includes installed equipment. NOTE_TO_WRITER: Insert definition of an individual job order (IJO) as applicable to contract contemplated.

C.2.11 Installed_Building_Equipment: (Ref. applicable sections of ARs 405- 45, 420-70, and 735-5 will be used to develop the definition.)

C.2.12 Maintenance: (Ref. AR 420-10 and TM 5-610, para 5, page 5. Except as may be limited by the DPW, definitions contained in AR 420-10 and TM 5-610 will apply to all RPMA operation, maintenance and repair services performed under the contract.)

C.2.12.1 Preventive_Maintenance: (Ref. TM 5-610, page 5, para 5 and AR 420- 22) All scheduled preventive maintenance is Work Level I without exception.

C.2.13 Minor_Construction: (Ref. AR 415-35, page 1-1, para 1-3c, "Construction.") NOTE_TO_WRITER: Minor construction is a part of the DPW mission. The definition of minor construction includes "new work" such as "installation of a new facility.... Construction of a new road, street, or structure and alteration so that facilities may be used for a new functional purpose." New work should normally be accomplished by a new contract. However, new work should also be a part of the cost comparison if such work is accomplished in-house or when determined to be in the best interests of the Government IAW current guidelines (e.g., AR 5-20). Considerations include current and existing acquisition guidelines concerning small business set-aside (including section 8(a)) contracts, which might limit umbrella-type contracts. New guidelines are frequently issued by DOD, DA, and MACOMs. The writer must be alert to changes in acquisition or CA regulations which might affect the specific acquisition package. DA policy is that specifications will be written in a manner that will allow Contractors to classify Contractor's employees under either the Davis Bacon or Service Contract Act in a large RPMA contract.

C.2.14 Noncritical_Equipment_or_Facilities: Those categories of equipment or facilities that do not affect the health of personnel, cause damage to Government properties, or cause critical facilities such as ADP to shut down in case of equipment failure.

C.2.15 Operator_Equipment_Maintenance: The basic daily services performed by the equipment operator IAW DA PAM 738-750. Includes visual inspection for damage and pilferage, leaks, instrument operation, brakes, transmission (clutch), steering, engine operation, lights, reflectors and other safety devices, and reporting of mechanical deficiencies for correction or repair. Fueling, oil and battery checks, tire inflation, and changing flat tires are operator tasks.

C.2.16 Plant_Equipment: Government-furnished property of a capital nature, consisting of equipment, furniture, vehicles, machine tools, test equipment, and accessory or auxiliary items, but excluding special tooling and special test equipment, used or capable of use for administrative or general plant purposes.NOTE_TO_WRITER: For accounting purposes, include under facilities provided to the Contractor in C.3 only that property on DPW property books, to include mobile kitchen equipment; e.g., only that which is DPW responsibility.

C.2.17 Quality_Assurance_Surveillance_Plan_(QASP): A written Government plan that details what is to be evaluated,

how evaluations are to be accomplished, frequency of evaluations, evaluation parameters, sampling guides, inspection checklists, and other information that the Contracting Officer should have in order to provide effective QA.

C.2.18 Quality_Control_(QC)_Program: The Contractor's system of controlling the equipment, systems, or services to insure that requirements of the contract are met. The Contractor is responsible for QC and for offering to the Government for acceptance only those supplies or services conforming to contract requirements.

C.2.19 Random_Sampling: A method of selecting a sample from a lot (or population) in such a way that every possible sample has the same probability of being selected.

C.2.20 Reliability_Rate_(RR): A measure of equipment performance computed by dividing actual operating hours by required operating hours. Operating hours are acceptable only when the desired output is being maintained.

C.2.21 Repair: (Ref. Para 1-3, B(2), AR 420-10.)

C.2.22 Sample: A collection of individual samples from a lot (or population). Ordinarily inferences are to be made from the sample to the lot, and the one must be in some way representative of the other.

C.2.23 Sampling_Guide: A part of the QASP which contains information describing how to randomly sample a specified

service requirement. It shows the AQL, the lot size, the sample size, the sampling procedure, the inspection procedure, and the performance criteria. NOTE_TO_WRITER: Insert definition of a service order (SO) and Standing Operations Order (SOO) as applicable to the contract contemplated. SO thresholds are flexible within Office, Chief of Engineers (OCE) guidelines.

C.2.24 System: A system, as used in the contract, includes all mechanical and electrical equipment; supporting structures; pneumatic, electrical, and mechanical types of controls; and all auxiliary equipment required to provide a specific function and output requirements.

C.2.25 Technical_Bulletin_(TB): A publication containing technical information pertaining to vehicles, equipment, and professional techniques.

C.2.26 Work_Levels: The established levels at which any RPMA facility shall be maintained or operated to assure maximum overall economy consistent with its functional requirement and to protect the Government's investment. For purposes of the contract, the levels are defined as follows: NOTE_TO_WRITER: Where minor construction or repair of real property is predominate or where repair (see "construction" as defined in FAR 36.102, and DFARS 236.102) individual job orders are severable from predominant services, the following levels should be considered. The appropriate parenthetical sentences should

be selected depending on how the costs of supplies, materials, and equipment is to be paid, i.e., either reimbursable or included in the fixed-price bid. Equipment costs should be reimbursable when additional specialized equipment (not normally required), is required to perform reimbursable work.

C.2.26.1 Work_Level_I: This level of work is defined as all service operations and recurring maintenance activities. Included in this level is operation of utility plants, performance of recurring maintenance such as preventative maintenance, grounds maintenance, snow and ice removal, custodial services, trash collection and disposal, startup/shutdown of seasonal system and facilities, and all other periodic or recurring work described in the contract. (All supplies and materials required to execute work required under this level will be reimbursed at source invoice cost.)

C.2.26.2 Work_Level_II: This level of work is established for all nonscheduled repair work required to restore utility equipment or a facility (Real Property) to a condition as required to function in a manner as the equipment or facility was originally functioning or intended to function. The Contractor's responsibility for cost in Work Level II is limited to (specify) work hours and ($(specify)) (unlimited) for parts and materials for each individual work order. An individual repair order is defined as a single event, occurrence, or

condition that can be repaired as a unit to restore failed or deteriorated condition to an operable or restored condition. Work orders will not be combined to exceed the repair order limits established above. Work required as a result of fire/smoke damage to facilities or catastrophic acts of God are excluded from this level. Any damages that result from negligence of the Contractor shall be the respon sibility of, and cost to, the Contractor to repair or replace regardless of cost. NOTE_TO_WRITER: Level II Work. To determine the limits for nonscheduled repair (and maintenance) to be classified as Level II, it is recommended that a profile be made of job history to determine the normal groupings of jobs by hours of labor and material cost. The upper limits should be as high as practical to reduce administrative costs but should avoid adding a high risk to Level II costing. Prudent responsible Contractors are expected to assume equitable risk in fixed-price contracts. Establish limits that are equitable to both the Government and the Contractor.

C.2.26.3 Work_Level_III: This level of work is established for work required due to acts of God, minor construction and repair of equipment or facilities (see AR 210-50) which exceeds Work Level II. This work will be accomplished by the Contractor only when ordered and accomplished at the unit prices established in the in definite delivery portion of the

bid schedule. The Government reserves the right to have level III work done by other Contractors or means. CAUTION: All work under Level III must be approved, in writing, by the Contracting Officer prior to any performance, emergency work.

NOTE_TO_WRITER: (Ref. TN420-10-01, chap 4, para 4-3). The information needed to maintain SOO, SO, and IJO documents should be obtained from data submitted by the Contractor. These documents will be maintained by residual in-house forces. Contractor's responsibility and cost may be established at a minimum of 40 hours labor and $1,000 for materials, or at a higher level if needed to make the Contractor responsible for the majority of the established workload in order to reduce administrative costs. The installation should establish an equitable range of risk for both Contractor and Government. A clear, concise separation of responsibility for cost must be established. Contractors must not be allowed to pick or choose work exceeding Level I. Additional levels should be developed, if appropriate, by the installation. These levels should not be confused with SOO, SO, or IJO documents used for work control purposes. The levels should be used only to provide a clear separation of responsibility for costs (i.e., Contractor cost or reimbursable).

C.2.26.4 Priorities: There are three (3) categories of priorities established for service calls for RPMA work:

C.2.26.4.1 Emergency: (Ref. DA Pam 420-6, para 4-5(3)(h)1) all emergency reimbursable work will be approved verbally only by the Contracting Officer.

C.2.26.4.2 Urgent_Calls: (Ref. DA Pam 420-6, page 4-8, para 4- 5(a)(3)(h)2)

C.2.26.4.3 Routine_Calls: (Ref. DA Pam 420-6, page 4-9, para 4- 5(a)(3)(h)3)

C.2.27 Air-Conditioning: A method of reducing air temperature by mechanical means. Air-conditioning may be done with either mechanical or absorption refrigeration systems and equipment.

C.2.28 Central_Air-Conditioning_Plant: A single-point source (one location) of refrigeration which may supply one or more air handling units or fan-coil units. A central plant will be a single integrated system serving all the permissible spaces of a building or group of buildings.

C.2.29 CFC: A fully halogenated (no hydrogen remaining) halocarbon containing chlorine, fluorine, and carbon. Production of CFC refrigerants, as regulated by the Montreal Protocol and Title IV of the 1990 Amendments to the Clean Air Act, will first be reduced and then eliminated entirely by the year 2000.

C.2.30 Dehumidifying: The reducing, by any process of the quantity of water vapor within a given space, regardless of dry bulb temperature.

C.2.31 Evaporative_Cooling: The process by which the dry bulb temperature of the air is reduced while the wet bulb temperature remains constant.

C.2.32 Exception: A statement in the regulation that an otherwise valid requirement need not be applied, or may be applied differently in a particular set of circumstances. An exception may be either mandatory or optional, depending on the wording of the text. No approval action is needed. (See "waiver.")

C.2.33 Humidity_Control: The controlling, by any process, of the quantity of water vapor within a given space, regardless of dry bulb temperature.

C.2.34 HCFC: A halocarbon which contains fluorine, chorine, carbon, and hydrogen. HCFC refrigerants have a much shorter atmospheric lifetime than CFCs and thus much lower potential for depleting the Ozone layer. The Clean Air Act Amendments restrict the production and use of HCFCs after the year 2015 and completely ban their production by 2030.

C.2.35 HFC: A halocarbon that contains only fluorine, carbon, and hydrogen. Since HFC refrigerants contain no

chlorine, they have no potential for depleting the stratospheric ozone layer.

C.2.36 Mechanical_Ventilation: The process of using mechanical means to continuously replace with outside air the air in any space in a building.

C.2.37 Medical_Facilities: Hospitals, medical clinics, dental clinics, and all similar medical activities which may be located on an Army installation.

C.2.38 OCONUS: Outside the 48 contiguous States.

C.2.39 Ozone_Depletion_Potential_(ODP): The relative capacity of a substance, per unit weight, for destroying the earth's stratospheric ozone layer, in comparison to CFC-11, which has been arbitrarily assigned an ODP of 1.0.

C.2.40 Personnel_Living_Spaces: Spaces designed for continuous living by personnel, either with or without their dependent families. (Examples are barracks, bachelor quarters, and dependent family quarters.)

C.2.41 Reclaim: To reprocess refrigerant to new product specifications by means which may include distillation. This will require chemical analysis of the refrigerant to determine that appropriate product specifications are met. Usually available only at reprocessing or manufacturing facilities.

C.2.42 Recovery: To remove refrigerant in any condition from a system and store it in an external container without necessarily testing or processing it in any way.

C.2.43 Recycling: To clean refrigerant for reuse by oil separation and by single or multiple passes through devices, such as replaceable core filter driers, which reduce moisture, acidity, and particulate matter. Usually implemented at the job site or at the local service shop.

C.2.44 Space_Conditioning: The simultaneous control of any or all factors of temperature, humidity, motion, distribution, or purity of the air within a structure.

C.2.45 Waiver: An approval to ignore or modify a regulation requirement for a specific case. A waiver must be requested for each case. It may not be used as a precedent for another similar case. (See "exception.")

C.3 Government-Furnished_Property_(GFP):NOTE_TO_WRITER:

a. The policies described in AR 5-20 must be considered when making determinations concerning GFP. It is recommended that the writer read FAR Part 45 and DFARS Part 245 which sets forth DOD policy with respect to providing property for use by Contractors and DFARS Supplement No. 3 which sets forth guidance for DOD personnel engaged in administration of contract clauses relating to Government property in the possession of a Contractor prior to completing this section.

b. As a general rule, contract clauses or statements which make Contractor performance dependent on Government performance should be avoided. Policy as stated in FAR 45.102 is that ordinarily Contractors are required to furnish all material required for performance of Government contracts. Supplies and materials should be furnished to a Contractor only when it is in the Government's interest by reason of economy, standardization, the expediting of production, or other appropriate circumstances. IAW this policy, Contractors should normally be required to provide supplies or materials that will be consumed or expended in the performance of an RPMA function. An initial stockage of supplies and materials may be furnished to a Contractor to minimize his immediate capital investment and to reduce existing Government stocks to the level needed for other RPMA functions. The Contractor should be responsible for providing an adequate supply thereafter unless it is in Governments best interest as described in AR 5-20.

c. The Government must retain adequate TDA authorized equipment and material to continue to perform residual management functions. This equipment and material must be separate from TDA items that will support the in-house work force.

d. The decision to offer or not to offer Government property to a Contractor shall be determined by a costbenefit analysis justifying that the decision is in the best interest of the Government. The determination on Government property must be supported by current, accurate, complete information and be readily available for the independent reviewing activity. The design of this analysis shall not give a decided advantage/disadvantage to either in-house or contract competitors. The management of Government property offered to the Contractor shall also be in compliance with FAR Part 45. (Ref. DoDI 4100.33)

C.3.1 General:

C.3.1.1 The Contractor has the option to reject any or all GFP. However, if use of GFP is rejected, the Contractor shall provide all necessary property, equipment, or items, adequate in quantity and suitable for the intended purpose, to perform all work and provide all services in the established time frames at no additional cost to the Government. The Contractor shall return any GFP not utilized to the maximum in performance of contract work. Such returns will not be refurnished if needed later and shall not be cause for any nonperformance of work or increase in contract price. (Such returns will normally be redistributed elsewhere and would not be available for return to a Contractor.)

C.3.1.2 All GFP will be provided in an operable (or state repair requirements), but "as is" condition and shall be used only in connection with performance under the contract consistent with applicable Federal, Department of Defense, Army, and (State) Environmental Act policies, standards, codes, or directives (specify where found). NOTE_TO_WRITER: It is recommended that all GFP be listed under the applicable heading. However, if the list(s) (is) (are) extensive (an) attachment(s) may be used. Include in the listing any equipment due in, when it can be expected, if it will be turned over to the Contractor for his use, etc.

C.3.2 Facilities_and_Utilities: The Government will furnish, without cost to the Contractor, designated space in building (specify). The Contractor shall maintain such building space to the same standards as similar areas occupied by the Government (specify where the standards are found). The Contractor shall not make any alterations to the space except with written permission of the Contracting Officer. Any approved Contractor-requested alterations shall be made at no additional cost to the Government. The Contractor shall restore the space to the condition in which received, at own expense, fair wear and tear excepted, at time of contract completion or termination except as otherwise approved in writing by the Contracting Officer. The Government reserves the right to

reassign facilities as required due to changing Government needs. NOTE_TO_WRITER: The installation must determine whether to furnish utilities or to charge them to the Contractor, based upon existing or expected conditions and which (is) (are) in the best interests of the Government. Two (2) options are provided below. If option II is used, a utilities contract must be drawn up by the Contracting Officer and attached to the solicitation package. Utilities contracts must be made IAW DFARS Supplement No. 5 and AR 420-41. (See FAR 52.236-14). Address energy conservation incentives and consider inclusion of the Contractor as a participant in the energy council. Require the Contractor to provide a conservation plan for the Contractor area of responsibility. Evaluation of energy awareness should be a payment factor of most functions.

C.3.2.1 Utilities_(Option_I): The Government will furnish, without charge to the Contractor Class (specify) on-base telephone service. The Contractor shall provide his own local and longdistance telephone service at no additional cost to the Government. (Due to costs to administer and control, provision to furnish long-distance telephone service is not recommended; however, see option II.)

C.3.2.2 Utilities_(Option_II): The Government will furnish the following utilities. Each utility shall be charged to, or paid by, the Contractor IAW the utilities contract

contained herein as attachment (specify). Average utility consumption rates during the last (specify) (years) (months) are as follows: Utility Volume or Usage Average Cost (specify type of utility and estimates of the volume or usage and an average monthly or annual cost). NOTE_TO_WRITER: Add or delete utilities as applicable to installation needs. Few installations break out costs of utilities by functions; however, these costs must be estimated as accurately as possible to show historical usage if the Contractor is charged for the utilities. If Option II is used, incorporate necessary instructions in SECTION L for the Contractor to complete, sign, etc., the utilities contract.

C.3.3 Vehicles: The Contractor shall insure that Contractor personnel who operate Government-furnished equipment (GFE) off the installation shall possess a valid State operator's license (and shall obtain a Government operator's license IAW installation regulations when applicable).

C.3.4 Equipment_and_Tools : The Contractor should furnish; however, if furnished by the Government insert applicable information.

C.3.5 Accountability,_Control,_and_Maintenance: (Ref. applicable Contract Clause(s) from FAR 52.245-1 through 52.245-19) NOTE_TO_WRITER: Wording to the effect that a Contractor must accept a Government list if he does not inventory the property, etc., is not recommended. The Contractor must

inventory, sign, and agree with the inventory if he is to be held responsible. The Contractor must be required to inventory the property to preclude protest or appeal. However, Contractors who, of their own volition and as a matter of administrative convenience, accept and sign the Government inventory list without making an inventory do so at their own risk. Accountability, control and maintenance specifications should cover all Governmentfurnished facilities, equipment, parts, supplies, materials, etc.

C.3.5.1 Accountability: An initial inventory of GFP shall be made jointly by the Contractor and the Government on or before the commencement of work. The operational, or condition status, will be jointly determined. Items found not to be in working order, or not suitable for their intended purpose, will be recorded and the Government and the Contractor shall certify as accurate the joint inventory. All inventory listings will utilize DD forms (insert) to record inventory data. (Insert requirements for the Contractor to turn in salvageable materials, fixtures, etc.).

C.3.5.1.1 A joint inventory of Government property shall be conducted by the Contractor and the Government on comple tion or termination of the contract and as required by FAR 52.245. If the joint inventory discloses that Government property is lost or damaged, except for fair wear and tear, the

Contractor shall pay the Government the current market value for any lost or damaged Government property. (Insert information as to how current market value will be calculated.)

C.3.5.1.2 Throughout the contract period, the Con tractor shall keep current the inventory listing. The Contractor shall prepare DA forms (cite forms) for adjustments in the account (specify if the Contractor may request and use the Government system of accounting for GFP).

C.3.5.1.3 Equipment operating manuals and suppliers' catalogs currently maintained by the Government will be turned over to the Contractor prior to commencement of work under the contract. An inventory of suppliers' catalogs will not be taken since the catalogs are a disposable item and become obsolete within several years after issue. However, the Contractor shall maintain an upto-date supplier catalog file of pertinent supplies and components for GFE maintained under the contract. (Specify any requirement for the Contractor to obtain updates of manufacturers' manuals or suppliers' catalogs.)

C.3.5.1.4 Other documents which shall be updated and maintained by the Contractor include:

a. Detailed and current equipment installation layout drawings.

b. Detailed building plans and as-built drawings of all installation facilities.

c. Available manufacturers' literature and applicable mechanical, plumbing and electrical drawings and functional schematic diagrams

d. Standard Government forms as (specify) are required for the fulfillment of the contract. Forms and logs are subject to change periodically. Changes in a form which affect contract cost or price will be subject to the contract clause (SECTION I) entitled "CHANGES."

e. Cite who will be responsible to obtain, replenish, and maintain stock of standard or other forms. Only forms which are mission essential or are performance-oriented should be retained. Where required by regulation, etc., and not deemed essential, the DPW should request a waiver or recommend the forms be discontinued through appropriate Government channels. All forms required for use by the Contractor must be current and accessible to the Contractor.

f. Local decisions must be made concerning Governmentfurnished supplies/parts/materials. Prior to beginning work under the contract, the Government will furnish to the Contractor a Government prepared inventory of supplies, parts, and materials which are to be used for normal and routine maintenance. A joint inventory will be taken and duplicate copies prepared and agreed to by the Contractor. It is estimated that inventory value is approximately $(specify) with

(specify) line items. The Contractor shall use the Government-furnished supplies, parts, and materials, as needed, but is not required to replace them. The Contractor shall maintain Contractor owned supplies, parts, or materials at levels the Contractor determines necessary to meet the commitments of the contract. At contract completion, or termination, any excess Government-furnished supplies, parts, or materials shall be returned to the Contracting Officer. Excess Contractor-furnished supplies, parts, or materials shall remain Contractor property. NOTE_TO_WRITER: Include a list of supplies, parts, or material to be furnished by the Government. If extensive, reference here and include the information as an attachment. Government-furnished supplies, parts, or material subsequent to initial inventory should be limited to those specifically designed for Federal or Military applications or specification items. Inclusion of this information will preclude confusion and possible dispute. Provide potential Contractors a maintenance history and state any reimbursement for parts. Specify necessary control and maintenance requirements needed to supplement the FAR Property Clauses. (FAR 52.245-1 through 52.245-19)

C.3.5.2 Control: (Insert any control requirements necessary to supplement the Government property clause used.)

C.3.5.3 Maintenance: Parts or supplies, which can only be obtained through Government sources, are cataloged in the Army Master Data File (AMDF) which is provided in microfiche format and updated monthly. Installation of all parts or material shall be the Contractor's responsibility and cost (specify input the Contractor will be required to provide residual force for Standard Army Intermediate Level Supply System).

C.3.6 Services:

C.3.6.1 Orientation: Prior to contract start date, the Government will provide, to the Contractor's key management and supervisory personnel performing under contract, orientation as follows: NOTE_TO_WRITER: Orientation, or training, will be limited to that necessary to properly explain the work and familiarize the Contractor and his key personnel with the installation facilities, transition requirements, and regulations. The Contractor is responsible for orienting or training his personnel at his own expense and on his own time.

C.3.6.2 Emergency_Medical_Service: (Ref. AR 40-3) Medical services for the Contractor's personnel are the responsibility of the Contractor. However, the Government will provide, on an emergency basis, medical services for job-related injuries while an employee is performing under the contract. The Contractor shall reimburse the Government for emergency medical

services provided upon receipt of invoice from the medical facility. Medical facilities are located (specify). In addition, the Government may conduct occupational/industrial hygienic surveys, evaluations, and inventories. The Contracting Officer will notify the Contractor of any recommendations or of any evaluation which reveals real or potential health hazards that require protective measures to be implemented. The Contractor should notify the Contracting Officer of any potential health hazards that require attention. (Define emergency services which will be provided and list cost of the services or specify where found. Any known OSHA deficiencies should be provided to potential Contractors.)

C.3.6.3 Parking: The Contractor will be provided parking space as shown by attachment (specify). The Contracting Officer may designate other spaces, if such spaces are available. (Contractors should be provided spaces in the same manner that Government employees are provided space.)
NOTE_TO_WRITER: (Insert other services, e.g., postal, that the Government will provide: delete items not applicable.)
Potential Contractors should be cautioned that facilities provided for Contractor use are subject to change based on changing Government requirements.

C.4 Contractor-Furnished_Property:

C.4.1 Property: All Contractor-furnished equipment, vehicles, supplies, parts, or materials shall meet applicable Federal, Department of Defense, Army, State, and local laws, codes, or regulations (specify where found).

C.4.2 Supplies,_Parts,_and_Materials: Contractor-furnished items found not meeting acceptable standards shall be replaced by the Contractor at the Contractor's expense. All Contractorfurnished parts and materials must be approved by the Contracting Officer prior to incorporation into contract work. (Ref. FAR 52.236-5) NOTE_TO_WRITER: If the Contractor is to furnish, provide a detailed listing of items to be furnished by nomenclature, size, make, model, etc., and annual usage factors to allow preparation of bid offer.

C.4.3 Records: The Contractor shall maintain complete and accurate records of all materials and parts used for Level III work. This information shall be recorded on each Level III work order completed. The Contractor shall maintain a copy of all delivery tickets, sales slips, and other documents identifying items purchased under the requirements portion of the contract with individual work or job records. If reimbursable under levels I and II, records must be maintained for these also.

C.4.4 Manufacturers'_Manuals: The Contractor shall obtain and maintain manufacturers' operating instructions and maintenance manuals on all new equipment installed by the

Contractor. These manuals and operating instructions shall become the property of the Government at the expiration or termination of the contract.

C.4.5 Failures: Contractor-furnished equipment or items, inoperable or unserviceable, for whatever reason, including failure to meet Federal, State, or local safety requirements (specify where found), shall be removed from the installation within (specify) hours after failure (except items undergoing maintenance by the Contractor in Government-furnished facilities). Such failure shall not be cause for the Contractor to reduce any service or performance.

C.4.6 Maintenance: Maintenance, or lack of maintenance, on Government or Contractor-furnished equipment or lack of repair parts, supplies, or materials shall not be cause to reduce any work or service. The Contractor shall provide all equipment and material necessary to provide all work or service in the specified time frames notwithstanding any maintenance requirement on Government or Contractor-furnished equipment, parts, or supplies. The Contractor shall repair, or replace if applicable, at the Contractor's expense, all Government equipment or property, damaged by a lack of preventive maintenance services IAW required maintenance schedules. In event the Contracting Officer determines that laboratory tests are required to determine reason for damages as a result of a

Contractor's claim that damage was not caused by any lack of maintenance, results of such laboratory tests shall be conclusive. If such tests support the Contractor's claim, the Government will pay the costs of such tests. If such tests support the Government position, the Contractor shall pay all costs of such tests, to include any related costs.

C.5 Specific_Tasks: NOTE_TO_WRITER:

a. All major tasks identified for inclusion in the PWS should appear in this section. It is the heart of the solicitation. See Para. C.5, page C-48 for examples of Specific Tasks and Services.

b. Tasks should be grouped according to function.

c. Performance indicators, standards, and acceptable quality levels should also be grouped by function. This grouping should be used to develop the Performance Requirements Summary Table(s). (See SECTION E.)

C.6 Applicable_Documents: NOTE_TO_WRITER: All referenced publications should be furnished or made available for potential Contractor review. Check all available sources to determine current issues as DA PAM 310 may not reflect all the latest changes or versions.

C.6.1 General: The Contractor is obligated to follow and adhere to those documents coded mandatory. Specific paragraphs are referenced in instances where only a portion of the document

is mandatory. Supplements or amendments to mandatory publications shall be considered to be in full force and effective upon receipt by the Contractor, except when such supplement or amendment is deemed to cause an increase, or decrease, in cost of contract performance. In such event, the Contractor shall inform the Contracting Officer, in writing, prior to implementation of such supplement or change. If applicable, a negotiated change in contract price will be made to mutual satisfaction of both the Contractor and Government prior to implementation of the change.

C.6.2 Contractor-Furnished_Documents: Publications referenced as advisory, but not provided to the Contractor, may be obtained by the Contractor at own expense and will remain Contractor property at completion or termination of the contract except as specified in C.4.4. Failure to obtain, or have, such documents shall not be cause for the Contractor to reduce any service or performance, or reason not to comply with any contract term or condition.

C.6.3 Posting_and_List_of_Documents: The Contractor shall provide that all publications received are posted to date. The publications are coded as follows:

Government-Furnished = GF

Contractor-Furnished = CF

Paragraph Specific = PS

NOTE_TO_WRITER: Code the publications, as appropriate to the installation, using the codes above. If the publications list is extensive, it is recommended that an attachment be used, and appropriate modification be made to statements above. The installation must insert dates of the current publications and any applicable changes. Federal, DoD, Army, and MACOM regulations are mandatory for in-house personnel. The installation must determine the extent they will be mandatory on a Contractor's operations. AR 11-27 and the Army Facilities Energy Plan shall be mandatory and Contractors shall comply.

C.6.4 Government_Publications: Department_of_the_Army

| | |
|---|---|
| AR 11-27 | Army Energy Conservation Program |
| AR 200-1 | Environmental Quality, Environmental Protection and Enhancement |
| AR 210-50 | Family Housing Management |
| AR 415-35 | Minor Construction |
| AR 420-10 | Management of Installation Directorates of Engineering and Housing |
| AR 420-15 | Certification of Utility Plant Operations and Personnel Performing Inspections and Testing of Vertical Lift Devices |
| AR 420-17 | Real Property and Resources Management |
| AR 420-53 | Refrigeration |
| AR 420-54 | Air-Conditioning and Refrigeration |

| | |
|---|---|
| AR 420-55 | Food Service and Related Equipment |
| AR 710-2 | Supply Policies Below the Wholesale Level |
| TM 5-670 | Refrigeration, Air-Conditioning, Mechanical Ventilation, and Evaporative Cooling |
| TM 5-671 | Preventive Maintenance for Refrigeration, Air-Conditioning, Mechanical Ventilation, and Evaporative Cooling |
| TM 5-785 | Engineering Weather Data |
| TM 5-810-1 | Mechanical Design: Heating, Ventilating, and Air Conditioning |
| TM 5-810-3 | Mechanical Refrigeration and Ventilation in Cold Storage Facilities |
| TM 5-838-2 | Army Health Facility Design |
| TM 5-855-4 | Heating, ventilation, and Air-Conditioning of Hardened Installations U.S. Army Corps of Engineers Architectural and Engineering Instructions (AEI) Design Criteria. The AEI is available through the Design Criteria Information System (DCIS) on the PAX computer system. Further information on this system may be obtained from HQUSACE, ATTN: CEMP-EA, Washington, DC 20314-1000. Technical Note 420-54-0.1 Use of Chlorofluorocarbons in AirConditioning and Refrigeration Systems |

DoD Directive 6050.9  Chlorofluorocarbons (CFC) and Halons

HQDA Ltr. 200-90-1  Elimination or Minimizing Atmospheric Emissions of Ozone-Depleting Substances

Non-Government_Publications

Air Conditioning and Refrigeration Institute (ARI), 1501 Wilson Boulevard, 6th Floor, Arlington, VA  22209

Air-Conditioning and Refrigeration Institute (ARI) Heat Pump Certification program

ARI 700-88, Specifications for Fluorocarbon Refrigerants ARI 740-91, Performance of Refrigerant Recovery, Recycling and/or Reclaim Equipment

American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), 1791 Tullie Circle, N.E., Atlanta, GA 30329

ASHRAE Handbooks:

HVAC Systems and Applications, 1987

Equipment, 1988

Fundamentals, 1989

Ventilation Standard 62

ASHRAE Guideline 3-1990, Reducing Emissions of Fully Halogenated Chlorofluorocarbon (CFC) Refrigerants in Refrigeration and AirConditioning Equipment and Application

Sheet Metal and Air Conditioning Contractors' National Association (SMACNA), 8224 Old Courthouse Road, Vienna, VA 22180

HVAC Duct Construction Standards, Metal and Flexible

HVAC Systems - Testing, Adjusting, and Balancing

Installation Standards for Heating, Air Conditioning, and Solar Systems

American National Standards Institute (ANSI), 1430 Broadway, New York, NY 10018

ANSI B16 Pipe, Flanges, and Fittings

ANSI B31.1 Power Piping

ANSI B36 Iron and Steel Pipe

National Fire Protection Association (NFPA), Batterymarch Park, Quincy, MA 02269

NFPA 90A Air-Conditioning and Ventilation Systems

NFPA 90B Warm Air Heating and Air-Conditioning

NFPA 91 Blower and Exhaust Systems

C.6.5 The Contracting Officer will make available installation maps/drawings to prospective bidders which show the location of the various systems and facilities to be maintained under the provisions of the contract. Maps and drawings will normally be identified as Technical Exhibits.

C.6.6 Reports_and_Data: NOTES_TO_WRITER: The installation must identify any report requirements to the

specific functional activities included in the solicitation and any resulting contract. This will permit offerors to identify applicable reporting requirements to the applicable function and to submit their bids accordingly, i.e., cost breakout. All report requirements from the Contractor must be individually listed on the CRDL (DD Form 1423) or other applicable listing. Consider the following: Reporting requirements are the same regardless of contract type or in-house vs. contract operation. Ensure that all required reporting data is required and received from the Contractor in a timely manner. DPW should discuss the importance of receiving these reports from a Contractor with the Contracting Officer and encourage his authority be exercised to ensure timely receipt of this information.

a. Report any circumstances of needed repair of the facilities or unusual soiling of an area which may affect performance of contract work, unhealthful or hazardous conditions, or any delays or interference of work by employees of the Government. Such report(s) shall be made as expeditiously as possible by the Contractor to the Contracting Officer. In any event, the report shall be made NLT the close of business (COB) on the same day.

b. Report to the Contracting Officer all personal articles found by the Contractor or his employees. Found articles shall be turned in to the Provost Marshal's Office by the Contractor on the same day found.

c. Report other circumstances which would affect the Contractor's performance of work required under the contract.

d. Provide various information, available only through the Contractor, which must be reported to higher levels of command and as specified below. The Contractor shall develop and maintain a data system which will provide accurate and complete data for the reports. The reporting system developed by the Contractor shall be subject to review and approval by the Contracting Officer. As a minimum, information for the reports shall be maintained and reports submitted at times specified. (IFS-M data systems contain information that should not be made available to contractors. In those instances where contractors are allowed access to the system, ensure that safeguards are in place to preclude access to such information.) Direct access to IFS-M, FESS, FEJE, etc., is not recommended. If required, Contractor training for DPW automation systems should be included as a Contractor responsibility.

e. The installation must specify data needed and, if applicable, the format in which data will be provided. Minimum use of Government forms is recommended if required data can be provided without use of Government forms. Reporting requirements must be the minimum required to meet the need for financial or other information. Few, if any, Contractors publish their accounting systems or procedures. Any requirement

for publishing and submitting such requirements in a cost reimbursement contract could restrict competition, and a strong possibility exists that Contractors would protest any such requirement. Any decision to include such a requirement in a cost reimbursement contract must be reviewed in conjunction with the principles and procedures of the Cost Accounting Standards (Ref: FAR Part 30, DFARS Part 230, and AFARS Part 30). If, after consideration, a requirement is included, it should be included as a separate item of cost breakout.

f. Use AR 420-10, AR 420-16, and the examples of flow charts and list of report requirements below to develop reporting requirements. The list of reports include only those required at DA or higher level. A paragraph will be dedicated to the information required from the contractor to support local residual staff management for RPMA planning, program execution, and reporting requirements. Specify what the Contractor receives and what is to be delivered to the Government such as detailed estimates, completion dates, total job costs, etc. Procedures for the residual management staff to operate IFS-M in a contract mode must be developed for internal use.

g. The following IFS-M guidance provides the minimum acceptable RPMA cost data reporting. This guidance is based on the premise that the type of contract pursued will be a fixed price contract for Work Levels I and II and a requirements/time and materials

type contract for Level III work. If other types of contracts (cost plus) are contemplated, different methods of IFS-M reporting may be utilized. The Government residual workforce will use those portions of IFS-M required to perform their function in a contracted environment. Also, contract cost data must be reported by facility, by functional group (AMS Code), and by document number (job). Work approval is a Government responsibility. Based on these policies, the IFS-M can be operated by the residual workforce in the same basic manner regardless if performance is in-house or by contract.

h. The cost of work accomplished by a Contractor must be entered into IFS-M as a contract cost. In order to accomplish this, completed work documents and contract invoice will be utilized as the data source for Contractor accomplished work. This can be accomplished in the following manner:

(1) The bid schedule should be in sufficient detail to extract costs for Contractor work performed at a fixed, predetermined level, e.g., operations, custodial services, etc. Cost data input to IFS-M will be accomplished using DA Form 4284.

(2) Work Orders accomplished by a Contractor will be entered into IFS-M when completed using completed job orders turned in by the Contractor with the estimated or actual costs. Regardless of the initiating source, the Government will receive, approve, and prioritize work requests and forward them

to the Contractor on DA Form 4287 or DA Forms 4283/4284/4286, as appropriate. When the work is complete, the Contractor will return the work requesting/authorizing documents to work reception with the total cost of the work entered on either DA Form 4287 or DA Form 4284. The project cost will be entered into IFS-M in the appropriate transaction code.

C.6.6 Reports_and_Data:

C.6.6.1 Reports: The Contractor shall maintain the following reports: (List all reports required by the installation.)

C.6.6.2 Data: The following data are required to be collected and documented on an hourly basis: (List all data required by the installation.)

C.7 TECHNICAL_EXHIBITS: The PWS writer should identify and include all technical exhibits such as maps and other documents which would be necessary to support a bid. Technical documents can be located in specified locations (Technical Library, etc.) and should be available for inspection by prospective bidders. Technical exhibits that become a part of the solicitation package must also be identified by title and exhibit number in SECTION J.

3. Performance_Work_Statement_Examples:

a. The following PWS examples are provided to assist the PWS

writer in developing a suitable acquisition package for Air-Conditioning and Refrigeration Plants and Systems Operations and Maintenance Services. Because variations exist among installations, each installation will have unique requirements for quality, quantity, and timeliness of services. "NOTE TO WRITER," headings, blanks, or items in parentheses require a judgment by the PWS writer. The paragraphs should be modified to meet local climatic and other requirements, and regulatory or command directives as they pertain to each installation.

NOTE_TO_WRITER: When the PWS writer finds a variance between the situation at his installation and the alternative choices provided in this guide, the writer should develop appropriate clauses and/or requirements statements.

b. The tasks and standards contained in the examples have been compiled from Air-Conditioning and Refrigeration Plants and Systems Operations and Maintenance performance work statements developed by military installations located in various regions of the United States. They are, therefore, a hybrid and will not likely be sufficient for any one singular installation.

c. The examples are assembled in a manner to facilitate user ease in extrapolating or adding items required to meet local installation needs. All specific tasks or standards should be taken into consideration. When tasks can be consolidated into one (1) general requirement in the final package, the PWS writer

is urged to do so, to reduce the possibility of ambiguity or overlap of work or services. Many of the work requirements can be broken out and consolidated; however, these work requirements were left in the individual functions in this guide for ease of use by the PWS writer. NOTE_TO_WRITER: Use of Chlorofluorocarbons (CFC) in AirConditioning and Refrigeration Systems

a. The Clean Air Act, 1990 Amendments, Title VI, "Stratospheric Ozone Protection," contains provisions which restrict the availability and use of ozone-depleting substances and will make it unlawful to intentionally vent or otherwise release to the environment any of these substances after 1 July, 1992. Regulations being written by the Environmental Protection Agency (EPA) under Section 608, "National Recycling and Emissions Reduction Program" will apply to recovery, recycling and safe disposal of the following commonly used Class I/II refrigerants:

Class I Chlorofluorocarbon (CFC) Refrigerants:

R-11, R-12, R-13, R-113, R-114, R-500 *, R-502 *, R-503 * Class II Hydrochlorofluorocarbon (HCFC) Refrigerants: R-22, R-123

* Mixtures containing Class I refrigerants

b. Before contracting out Air-Conditioning and Refrigeration Operation, Maintenance and Repair activities the PWS writer must become familiar with the new regulations and procedures covering

CFCs. The installation should have conducted an inventory of all air-conditioning and refrigeration equipment. The survey can help to establish recovery and recycling equipment, training requirements and record keeping requirements by the Contractor.

c. Contractor personnel shall require special training to operate and service air-conditioning and refrigeration equipment. The Refrigeration Service Engineers Society (RSES) is working with the EPA to develop certification programs.

d. Guidance on the procurement of refrigerant either by local purchase, new systems acquisition (ie. air-conditioning or refrigeration units under new construction or renovation/repair) is contained in HQDA Ltr 200-90-1, Eliminating or Minimizing Atmospheric Emissions of Ozone Depleting Substances, 27 July, 1990 and Technical Note 420-54-01, Use of Chlorofluorocarbons in Air-Conditioning and Refrigeration Systems, 26 June, 1991

e. Guidance on Recovery, Recycling, and Reclamation of Refrigerants is contained in EHSC Ltr CEHSC-FU-M Chlorofluorocarbon (CFC) Refrigerants in Operation and Maintenance, 26 March, 1992.

C.1 SCOPE: The following paragraphs are examples which may be used in SECTION C, paragraph C.1 of a solicitation. These paragraphs may be modified to suit unique requirements and local installation needs.

C.1 Operate_and_Maintain_Air-Conditioning_and_Refrigeration Plants_and_Systems: The Contractor shall operate, inspect, maintain, replace, and repair all air-conditioning and refrigeration plants and systems. The term, air-conditioning and refrigeration plants and systems, includes all such equipment, notwithstanding size or capacity to include individual units in family housing. Attachments (specify) provides a description of the plants and systems. (Insert operating hours, manning requirements, etc.) The Contractor shall develop and implement an effective chemical program to prevent scale and corrosion in all (specify) air-conditioning and refrigeration parts and systems.

C.1 Operate_Refrigeration_Equipment: The Contractor shall inspect, maintain, and repair the equipment listed in Technical Exhibit (specify) according to the manufacturer's instructions, and maintain specified space temperatures values listed in (specify). The Contractor shall maintain hourly operating temperature records for all cold storage rooms. The records shall be maintained for a six (6) month time frame. All records shall be available for inspection by the Contracting Officer.

C.1 Refrigeration_Equipment_Maintenance_and_Repair: All equipment maintenance and repair provided by the Contractor shall meet or exceed the overall reliability rates expressed in Technical Exhibit (specify). The quality of work accomplished

by the Contractor shall meet manufacturer's specifications or applicable documents as listed in (specify). Critical air-conditioning and refrigeration systems are located (specify). (List all systems that must operate 24 hours per day, i.e., computer systems, cold storage plants, etc.) Repairs to all critical systems shall be an emergency priority.

C.1 Instrument_and_Control_Systems: The Contractor shall inspect, maintain, and repair all instrument and control systems. Critical systems shall be noted in the Contractor's work schedules. The Contractor shall insure that control systems operate and function in such a manner to maintain the specified space temperatures of the mechanical system they control. These space temperatures are listed in Technical Exhibit (specify). Administrative and noncritical facilities shall be kept at 78@ F during the cooling season and 68@ F during the heating season. (Specify any allowable variation. List facility temperatures, latest regulations, and specify in conformance with designated use of buildings, consider inclusion of any Energy Monitoring and Control System (EMCS) repair and maintenance requirements, etc.)

C.1 Air-Conditioning_and_Ventilation_Equipment: The Contractor shall insure efficient and effective operation of the air-conditioning and ventilation systems. The Contractor shall maintain the required outputs for each type of equipment.

Critical air-conditioning systems and facilities are located at (specify).

C.5. SPECIFIC_TASKS_AND_SERVICES: The following are examples of PWS tasks and services that should or may be performed by the Contractor. The Contractor shall perform all the work necessary to maintain the Air-Conditioning and Refrigeration Plants and Systems. The following examples may be selected and/or modified to meet a particular installation's requirements.

C.5.1 Water_Treatment: The Contractor shall provide water treatment as follows:

C.5.1.1 Closed_Loop_Systems: The Contractor shall provide water treatment for closed loop chilled and dual chilled/heated water systems for control of corrosion, scale, and antifreeze protection. These systems shall be chemically analyzed for Ph, conductivity hardness, and level of treatment chemical as a minimum. Water analyses shall be performed (specify). (The installation should specify the treatment interval.) Treated chilled and dual water systems shall be isolated from the potable water supply by air gap or backflow preventers as required by local health and plumbing codes. The Contractor shall keep closed loop systems watertight. The Contractor shall maintain logs of chemical test data and maintenance for closed loop systems.

C.5.1.2 Large_Cooling_Towers_(Greater_than_150_ Ton_Capacity): The Contractor shall treat cooling towers greater than 150 ton capacity with a phosphate/polymer/copper corrosion and scale inhibitor or equivalent approved chemical program which includes both corrosion and scale inhibiting properties. Treatment shall include operation and maintenance of any automated control equipment present. (Use of automatic bleed off controllers and automatic pump feed systems including pulsing type water systems are recommended for all towers in this size range. Installations lacking these are advised to consider their purchase and installation.) The Contractor shall conduct daily analyses of cooling tower water for conductivity and level of treatment chemicals present. Periodic chemical analyses on installation make-up water supplies shall be conducted by the Contractor (specify) (weekly is recommended). (Specify) analyses of make-up water shall include pH and conductivity, as a minimum.

C.5.1.3 Small_Cooling_Towers_(Less_than_50_ Ton_Capacity): The Contractor shall treat cooling towers of less than 50 ton capacity with a glassy sodium hexametaphosphate polyphosphatae type chemical for inhibition of corrosion or scale and provide adjustable continuous bleed off. The Contractor shall conduct cooling tower water analyses weekly for

conductivity and presence of treatment chemical (specify testing requirements).

C.5.1.4 Towers_Between_50_and_150_Ton_Capacity: These towers shall be treated by the Contractor with either polyphosphates, chromates, acids, or a combination of chemicals dependent on relative tower size, tower importance, extent of usage, and length of the cooling season.

C.5.1.5 Required_Reports: The Contractor shall perform daily analyses of large cooling towers, weekly analyses of small cooling towers, periodic analysis of closed loop systems, and inspection reports of close loop systems. NOTE_TO_WRITER The following must be rewritten to meet the specific needs of the installation. Insert as applicable, any minimum frequencies for maintenance.

C.5.2 Component_Inspection,_Operation,_Preventive _Maintenance,Replace_and_Repair: The Contractor shall inspect, operate, provide preventive maintenance, replace or repair (specify intervals) the following:

C.5.2.1 Instrument_and_Control_Systems: The control systems are (pneumatic) (electric) (or a combination of both) (direct digital), (computerized) or combinations thereof, and are installed in (specify) facilities as shown in Technical Exhibit (specify).

C.5.2.2 Cold_Storage_Facilities_and_Refrigeration_Equipment: Cold storage facilities and refrigeration systems are (reach-in) (walk-in) type coolers or freezers with associated direct expansion evaporators, reciprocating or hermetic compressors, interconnecting piping, and outdoor or integral air-cooled condensers. The contract includes (specify) cold storage plants and associated refrigeration systems in (specify) facilities. (Include defrost equipment as applicable in this paragraph.)

C.5.2.3 Liquid_Chillers_and_Compressors: Liquid chillers are (both) (absorption chiller units) (and) (conventional chiller units) powered by (reciprocating) (centrifugal) (electric motors) (turbines) (internal combustion engines) (etc.). The contract includes (specify) liquid chiller units in (specify) facilities.

C.5.2.4 Evaporative_Coils_(DX_Type),_Chilled_Water_Coils, and_Coolers: Evaporator coils are (direct expansion)(DX type) which consist of piping, an expansion valve, or similar devices. The coil may be duct-mounted or a fan could be mounted behind the coil to drive air through the coil. Cooler units are cylindrical heat exchanger units used in HVAC or refrigeration work. Platetype heat exchanges are also used in cooler applications. Evaporators, chilled water coils, and coolers are component

assemblies of larger systems; however, in certain situations, such as in areas of ample river water or cool water supply, these component units are as separate system entities in themselves. The contract includes (specify) evaporator coils and cooler units in (specify) facilities.

C.5.2.5 Air-Cooled_Condensers: Air-cooled condensers are outdoor units, rooftop or ground mounted, and can be horizontal or vertical (smaller) with single or multiple banks of coils, fans, and casings. Fan drives are constant, variable, or intermittent cycle type with special screens and damper provisions added for cold weather operation. An air condenser is a major component assembly of a refrigeration or air-conditioning system. The contract includes (specify) air condensers or air-cooled condensers in (specify) facilities.

C.5.2.6 Cooling_Towers_and_Evaporative_Condensers: Cooling tower units are (indoor)(outdoor) units, rooftop or ground mounted, with single or multiple cells. Tower air can flow as induced (or forced) by mechanical draft fans or by natural draft as in a hyperbolic tower. Evaporative-cooled condensers operate on the same principle as a cooling tower. In practice, small cooling towers are labeled evaporative condensers whether they are open or closed tube type. Evaporative condensers are mounted indoors as well as outdoors. A cooling tower or evaporative condenser is a major component

assembly of a refrigeration or air-conditioning system. The Contractor shall provide water treatment for cooling tower water for control of corrosion and scale, control of organic growth, and antifreeze protection. The contract includes (specify) cooling tower and evaporative condensers at (specify) facilities.

C.5.2.7 Unit_Air-Conditioners_and_Air_Handlers_ (Morethan_5_Tons): Unit air-conditioners are rooftop-mounted units,unitary type, or air-handling units (fans and coils only) installed in equipment penthouses or storage service areas. The units are packaged-type units which contain major components and unit sections to make up a definable system, or air-handling units with remote compressor, condenser, or heating sections. While there is a wide difference in components used and arrangements available among various manufacturers, most units are packaged in one enclosure and contain reciprocating or hermetic compressors, DX evaporator coils or chilled water coils, blower with motors and belt drives, mixing box, filters, dampers, heating coils, and aircooled condensers. The contract includes (specify) unit airconditioners at (specify) facilities. Air filters shall be changed every (specify) months throughout the operating season of the equipment.

C.5.2.8 Evaporative_Air_Coolers: Evaporative air coolers are (wetted pad-type)(slinger-type)(rotary-type)

coolers. These units may contain fans and motors, evaporative pads, water recirculating pump, water tank, eliminators and baffles, water slingers, and motorized rotary disks. The contract includes (specify) evaporative air cooler at (specify) facilities.

C.5.2.9 Ventilating_Systems: Most of the ventilating systems in the (specify area) are included in the air-handling equipment of the heating and air-conditioning systems. Other ventilating equipment in the system includes the exhaust fans in the rest rooms and the roof ventilators in the (specify) areas. The number of exhaust fans included in the ventilating system are shown in Technical Exhibit (specify) The Contract includes (specify) fans located in (specify) facilities. (Include chilled water lines between buildings as applicable.)

C.5.3 EPA/OSHA_Regulations: The Contractor shall adhere to Environmental Protection Agency (EPA) regulations and Federal Occupational Safety and Health Administration (OSHA) as well as all applicable state and local regulations.

C.5.4 Refrigeration_and_Air-Conditioning_Services: The Contractor shall perform refrigeration and air-conditioning services including installation, inspection, monitoring, preventive maintenance, alterations, repair and replacement for all refrigeration and air-conditioning equipment; toxic exhaust and ventilating systems equipment; heating, vacuum, and

compressed air system equipment; and all components thereof in accordance with AR 420-49, AR 420-53, AR 420-54,AR 420-55, DA PAM 385-3, DA PAM 420-8, TB 43-0151, TM 5-670, TM 5-745, TM 5-810-1, TM 5-810-3 and TM 5810-4. The Contractor shall also operate equipment 24 hours per day as specified in Technical Exhibit (specify). All work tasks shall be accomplished by service order (SO), approved individual job orders (IJO's), standing operations orders (SOO's) or as otherwise directed by the Contracting Officer.

C.5.4.1 Response times and timeliness standards for completion of service orders for refrigeration and air-conditioning services shall be as follows (unless otherwise specified):

C.5.4.1.1 Emergency (Priority 1): Respond within one (1) hour with continuous effort until 100% complete (maximum 24 hours).

C.5.4.1.2 Urgent (Priority 2): Complete work with three (3) working days.

C.5.4.1.3 Routine (Priority 3): Complete within 30 calendar days.

C.5.4.2 All individual job orders shall be accomplished IAW the approved master schedule.

C.5.4.3 Quality and workmanship for IJO' and SO's shall be accomplished IAW Technical Manuals, Technical Bulletins, Army

Regulations and Technical Exhibits as referenced in the contract.

C.5.4.4 Guidelines and criteria for the above priorities are shown in Technical Exhibit (specify).

C.5.4.5 The Contractor shall provide accurate and complete documentation for all SO's, IJO's and SOO's. The documentation required includes the labor hours used for completion, the parts, materials, and supplies consumed for each project.

C.5.4.6 The Contractor shall clean up work sites, during and after work assignments and remove all unused material or refuse from the worksite. Refuse and debris shall be removed from the work site at the end of each workday and deposited at the post landfill (specify location).

C.5.5 Air_Compressors_and_Air_Drying_Equipment: The Contractor shall perform installation, inspection, monitoring, PM, replacement, and repair services to air compressors, air drying equipment, air supply systems and all related equipment components, including the following examples: V belts, electrical components, tank assemblies, mechanical components, air drying equipment and desiccants, filter cartridges, air compressor assemblies, air supply systems, oil-air-water separators, and controlling devices. The Contractor shall calibrate air compressors and air drying equipment as necessary

and IAW (specify references) as requested by SO,s, SOO's or IJO's.

C.5.6 Water_Coolers_and_Ice_Machine_Equipment: The Contractor shall perform installation, inspection, monitoring, PM, replacement, and repair services to water coolers and ice machine equipment and all related equipment components, including the following examples: compressors, refrigerant metering devices, motors, fans, pumps, electrical components, mechanical drives, bubblers and water valves; and shall repair refrigerant leaks.

C.5.7 Food_Service_Refrigeration_Equipment: The Contractor shall perform installation, inspection, monitoring, PM, replacement, and repair services to food service refrigeration equipment and all related equipment components, including the following examples: compressors, refrigerant metering devices, condensate removal systems, motors, fans, electrical components, door gaskets and seals; and shall repair refrigerant leaks.

C.5.8 Domestic_Refrigeration_Equipment: The Contractor shall perform installation, inspection, monitoring, PM, replacement, and repair services to domestic refrigeration equipment and all related equipment components, including the following examples: compressors, refrigerant metering devices,

condensate removal equipment, motors, fans, door gaskets, seals, and electrical components; and shall repair refrigerant leaks.

C.5.9 Vacuum_Equipment: The Contractor shall perform installation, inspection, monitoring, PM, replacement, and repair services to vacuum equipment and all related equipment components, including the following examples: V belts, electrical components, mechanical components, control devices, filters, pressure regulators and safety valves.

C.5.10 Air_Moving_Equipment: The Contractor shall perform installation, inspection, monitoring, PM, replacement, and repair services to air moving equipment and all related equipment components, including the following examples: mechanical components, electrical components, V belts, electric motors, ventilating fans, exhaust fans, comfort air fans, blower wheels, bearings, and shafts. The Contractor shall also balance air flows to original specifications, as needed to provide adequate comfort levels, or laboratory requirements.

C.5.11 Toxic_Exhaust_and_Ventilation_Systems: The Contractor shall perform installation, inspection, monitoring, PM, replacement, and repair services to toxic exhaust and ventilating equipment and all related equipment components, including the following examples: electric motors,motor mounts, air flow control valves, shafts, bearings, V belts, blower

wheels, toxic air filter components consisting of prefilters, particulate filters, and absolute filters.

C.5.11.1 Toxic exhaust and ventilation systems shall be monitored and maintained on a daily basis and repairs shall be made as required to prevent exhaust and ventilation systems from failing. Contractor personnel shall be on-call to take emergency action 24 hours per day, 365 days per year to correct malfunctions involving, or relating to, equipment used for toxic exhaust and ventilation. The Contractor shall ensure toxic exhaust systems are operating properly 24 hours per day, 365 days per year.

C.5.11.2 During normal duty hours, Contractor personnel shall be at the site of any malfunction in 15 minutes or less. At all other times, Contractor personnel shall be at the site of any malfunction within 30 minutes or less.

C.5.11.3 The Contractor shall keep repair parts on hand to repair toxic exhaust and ventilation systems. When systems in operation become inoperable, the Contractor shall repair the system within four (4) hours to restore operations.

C.5.11.4 Negative static pressure shall be maintained in all lab areas and atmospheric pressure shall be maintained in hallways. The Contractor shall provide documented information to the using agency as required, by preparing Toxic Exhaust Data

reports in accordance with UDI-L-5703, Sequence number A138, DD Form 1423.

C.5.12 Computer_System: The Contractor shall monitor and operate a (specify make and model of computer hardware and software) to monitor conditions of all heating, ventilating, airconditioning and exhaust systems, laboratories, test facilities and utilities 24 hours per day, 365 days per year for building (specify). Malfunctions shall be reported to the using agency and repaired by the Contractor. Monitoring is currently being done in building (specify).

C.5.13 Electric_and_Pneumatic_Control_Equipment: The Contractor shall perform installation, inspection, monitoring, PM, replacement, and repair services to include calibration to electric, pneumatic, electronic, electric pneumatic control equipment and all related equipment components.

C.5.14 Air-Conditioning_Equipment_(Up_to_and_Including_ 5_Ton): The Contractor shall perform installation, inspection, monitoring, PM, replacement, and repair services to air-conditioning equipment (up to and including 5 ton) and all related equipment components, including the following examples: compressors, electric motors, mechanical components, electric components, centrifugal pumps, refrigerant metering devices, V belts, chemical treatment equipment, window type air-conditioners, split type airconditioners, package type air-

conditioners, and fan and blower parts; and shall also repair refrigerant leaks.

C.5.15 Air-Conditioning_Equipment_(6_to_25_Ton): The Contractor shall perform installation, inspection, monitoring, preventative maintenance, replacement, and repair services to airconditioning equipment (six (6) to 25 ton) and all related equipment components, including the following examples: compressor, V belts, electric motors, fan and blower components, mechanical components, electrical components, centrifugal pumps, refrigerant metering devices, chemical treatment equipment, splittype water cooled air-conditioning equipment, split-type air cooled air-conditioning equipment, package-type water cooled airconditioning equipment, and package-type air cooled air-conditioning equipment; and shall also repair refrigerant leaks.

C.5.16 Air-Conditioning_Equipment_(26_to_100_Ton): The Contractor shall perform installation, inspection, monitoring, preventative maintenance, replacement, and repair services to air-conditioning equipment (26 to 100 ton) and all related equipment components, including the following examples: compressors, electric motors, fan and blower components, electrical components, mechanical components, centrifugal pumps, refrigerant metering devices, and chemical treatment equipment; and shall also repair refrigerant leaks.

C.5.17 Air-Conditioning_Equipment_(Over_100_Tons): The Contractor shall perform installation, inspection, monitoring, preventative maintenance, replacement, and repair services to air conditioning equipment (over 100 tons) and all related equipment components, including the following examples: compressors, electrical components, mechanical components, electric motors, centrifugal pumps, chemical treatment equipment, and refrigerant metering devices; and shall also repair refrigerant leaks.

C.5.18 Special_Equipment: The Contractor shall perform installation, inspection, monitoring, preventative maintenance, replacement, and repair services to special equipment as shown in Technical Exhibit (specify), and all related equipment components, including the following examples: compressors, refrigerant metering devices, fan motors, fan blades, pumps (vacuum and pressure type), electrical components, mechanical components, alarm systems, recording equipment, V belts, and centrifugal pumps; and repair refrigerant leaks. The Contractor shall test and adjust brine and ethylene glycol solutions periodically as shown in Technical Exhibit (specify). During extremely cold weather, when temperature reaches 15 degrees F or below, heating and ventilating equipment shall be monitored 24 hours a day by qualified personnel to make control adjustments and take necessary steps to prevent damage to Government-owned

equipment or tests in progress. This applies to those building where 100% fresh air make up is required. See Technical Exhibit (specify) for a listing of buildings and equipment.

C.5.19 Climate_Controlled_Chambers: The Contractor shall perform installation, inspection, monitoring, preventative maintenance, replacement, and repair services to operate and repair climate controlled chambers. The chambers provide a wide variety of climatic conditions to satisfy test requirements.

C.5.19.1 The Contractor shall provide personnel to operate the climatic equipment to supply specific climatic conditions in the following buildings (specify). The Contractor shall operate the equipment 24 hours per day including weekends and holidays, as necessary to satisfy test requirements. An operator shall be provided full time during testings.

C.5.19.2 The Contractor shall repair all climatic equipment and components including, but not limited to, the following examples: hand valves, float valves, mechanical components, refrigerant metering devices, compressors, alarm systems, centrifugal pumps, temperature and humidity recording equipment, electrical components, toxic filtering components, V belts, and recording equipment; and shall also repair refrigerant leaks.

C.5.20 CO2-Type_Refrigeration_Equipment: The Contractor shall perform services to CO2-type refrigeration equipment and all related equipment components including compressors, refrigerant systems, refrigerant metering devices, fan motors, fan blades, gaskets, electrical components, mechanical components, V belts, and shall also repair refrigerant leaks.

C.5.21 Cascade-Type_Refrigeration_Equipment: The Contractor shall perform installation, inspection, monitoring, preventative maintenance, replacement, and repair services to cascade-type refrigeration equipment and all related equipment components, including the following examples: compressors, refrigerant metering devices, mechanical components, fan motors, fan blades, gaskets, and electrical components; and shall also repair refrigerant leaks.

C.5.22 Constant_Temperature_and_Humidity_Control_ Equipment: The Contractor shall perform installation, inspection, monitoring, preventative maintenance, replacement, and repair services to constant temperature and humidity equipment and components including the following examples: compressors, refrigerant systems, refrigerant metering devices, fan motors, fan blades, centrifugal pumps, electrical components, mechanical components, alarm systems, and recording equipment.

C.5.23 Heat_and_Humidity_Controlled_Oven_Equipment: The Contractor shall perform installation, inspection, monitoring, preventative maintenance, replacement, and repair services to heat and humidity controlled oven equipment and components including recorders, electric components, mechanical components, gaskets and V belts.

C.5.24 Cooling_Tower_Equipment: The Contractor shall perform installation, inspection, monitoring, preventative maintenance, replacement, and repair services to cooling tower equipment and components including the following examples: fan blades, bearings, shafts, centrifugal pumps, valves, strainers, and chemical treatment systems.

C.5.25 Energy_Monitoring_Control_System_(EMCS): NOTE_TO_WRITER: The EMCS is a tool used to remotely start and stop equipment and to obtain information about the physical plant. Operation and maintenance of the EMCS requires an indepth understanding of the interaction of all parts of the physical plant, the general operating constraints of the controlled equipment, and the EMCS architecture and operating characteristics. Using information generated by the EMCS in the form of reports and system logs, the Contractor shall perform mathematical analysis and apply engineering fundamentals to develop and implement procedures for operation of the EMCS to achieve reduction of energy consumption, improvement of occupant

comfort and physical plant reliability through improved maintenance reporting. The Contractor shall respond to maintain, repair and modify the electric and computerized EMCS in building (specify).

C.5.25.1 The Contractor shall develop plans to conserve energy IAW AR 11-27 and (specify any local regulation).

C.5.25.2 The Contractor shall have operators on call 24 hours per day, 365 days per year to operate and monitor the system.

C.5.25.3 Scheduled maintenance and unscheduled maintenance/repair of the central site hardware will be performed by the computer system vendor. The Contractor shall contact the Contracting Officer to arrange for required repair/maintenance services during duty hours and after normal duty hours.

C.5.25.4 The Contractor shall perform scheduled preventive maintenance, diagnose trouble and repair field sensors, controls and interface devices at the Field Interface Device (FID) level to the nearest printed circuit card in accordance with manufacturer's literature.

C.5.25.5 The Contractor shall coordinate with the US Army Information Systems Command and the computer vendor to maintain, diagnose trouble, and repair field telephone lines

from the computer center to the telephone exchange and to the computer controlled FID MUX units.

C.5.26 Surety: The Contractor shall comply with Appendix (specify), Surety, when working in surety areas. The Contractor shall expect delays when entering these areas. Delay time is shown in (specify) Workload section.

C.5.27 Shutdown_and_Startup: The Contractor shall be required to shutdown and startup air-conditioning systems listed in Technical Exhibit (specify) as directed by the Contracting Officer. The Contractor shall provide input on a daily basis regarding airconditioning shutdown energy saving using the format shown in Technical Exhibit (specify). The Contractor shall submit this information to Government personnel as designated by the Contracting Officer.

C.5.28 Preventive_Maintenance: The Contractor shall perform preventive maintenance on all equipment and systems listed in Technical Exhibits (specify). Frequencies for preventive maintenance tasks are indicated in Technical Exhibit (specify) unless otherwise indicated. The Contractor shall follow the Government-approved preventive maintenance schedule for performing maintenance services on systems and equipment. The Contractor shall prepare and keep on file preventive maintenance reports of all preventive maintenance performed.

The Contractor shall monitor equipment and systems listed in Technical Exhibit (specify) at the frequency listed.

C.5.28.1 Cooling_Tower_Maintenance: The Contractor shall inspect and clean the cooling tower pump suction screen weekly. Spray nozzles shall be inspected for adequate spray coverage and cleaned whenever dirt and scale are found in the water passages. Every month the cooling tower louvers, spray chamber, and watercollecting pan shall be scrubbed thoroughly with a brush and flushed by water from a hose. The Contractor shall remove the atmospheric tower louvers yearly. The structural steel supports, water-collecting pan, and spray piping shall be cleaned and painted with asphalt varnish (product symbol VA) to prevent rust. Forceddraft towers shall also be dismantled yearly. Casings, eliminators, water-collecting pan, spray piping, and metal structural parts shall be thoroughly cleaned and painted. Fans shall be dismantled, and wheels and scrolls shall be cleaned and painted both inside and outside. The cooling tower pump shall be dismantled and inspected for excessive impeller wear. Worn impellers shall be replaced. All bearings on fans, pumps, and motors shall be checked for wear and replaced where necessary.

C.5.28.2 Refrigerating_System_Maintenance: The Contractor shall:

C.5.28.2.1 Properly operate, inspect, maintain, replace, and repair refrigerating equipment used for storage of subsistence and other items, including refrigerated structures and utilities.

C.5.28.2.2 Clean and maintain refrigerating equipment in a sanitary condition. Cleaning refrigerators and cold storage plants includes fans, cooling coils, interior cooling casing, condensers, condensing unit, motors, machinery compartment or enclosures, machine rooms, and other spaces normally used for service.

C.5.28.2.3 Protect refrigerating equipment and accessories with adequate guards to prevent damage from toppling piles or falling packages.

C.5.28.2.4 Maintain proper operating temperatures in refrigerated storage spaces.

C.5.28.2.5 Maintain properly defrosted cooling coils in all refrigerators (except domestic type) and in cold storage warehouse plants.

C.5.28.2.6 Service and check the operation of the emergency release mechanism.

C.5.28.3 Ice_Cube_Machine_Maintenance: The Contractor shall perform the following maintenance procedures on all ice cube machines. A list of makes, models, and locations is at Technical Exhibit (specify). The maintenance shall be

conducted (specify weekly; monthly; etc. based on local conditions). NOTE_TO_WRITER: The ice cube machine maintenance describe below is representative of one manufacturer's type; however, ice cube machines of other manufacturers operate similarly and should be maintained similarly. The PWS writer should review existing maintenance publications and include any particular maintenance procedures not covered below.

C.5.28.3.1 Lubrication: The only components of the ice cube machine that require lubrication are the gear head, motor bearings, and cam follower of the ice cutting assembly. These components should be lubricated every six (6) months.

C.5.28.3.2 Cleaning_Recirculating_Water_System: Ice is a food product; therefore, it is highly important that the recirculating-water system of the ice cube machine is kept clean. The water tank should be drained and flushed daily by opening the water tank drain valve. In addition, recirculating water systems should be cleaned periodically, depending on water analysis. The Contractor shall clean the system IAW TM 5-670.

C.5.28.3.3 Cleaning_Freezing_Tubes: Mineral deposits on freezing tubes may cause ice columns to remain in the tubes and prevent the machine from returning to the freezing cycle. The Contractor shall clean the tubes manually or chemically IAW TM 5670.

C.5.28.3.4 Cleaning_Water_Distributor_Header: The header shall be cleaned chemically, similarly to cleaning freezing tubes, or manually by using a fiber brush, hot water, and household detergent.

C.5.28.3.5 Cleaning_Condenser: The condenser of the ice cube machine shall be cleaned (specify frequency) chemically to remove dirt and scale by using an inhibited solution of hydrochloric acid.

C.5.28.3.5 Water_Blowdown: NOTE_TO_WRITER: When an ice cube machine produces ice, salts contained in the make-up water become concentrated in the recirculated water as they are ejected in the freezing process. Produced ice is pure and salts are concentrated in the recirculating pan. This condition is predominant in localities where the water supply is hard or contains high concentrations of solids. Mineral salts will build up over a period of time and will cause cloudy ice to be produced and may clog water headers, foul the water pump, or cause ice to stick in freezing tubes. In dealing with mineral salts, water softeners and water treating apparatus may be used. However, when combined solids in the water exceed 100 ppm, the water treating process must be supplemented by a blowdown system to remove a predetermined amount of water from the water tank during the harvest cycle. Commercial blowdown units are available to perform this function, and the manufacturer's

recommendations must be followed in the operation and maintenance of the units.

C.5.28.4 Rotating-Drum_and_Stationary-Drum_Ice_Flaking Machine_Maintenance: The Contractor shall perform the following maintenance procedures on all rotating-drum ice flaking machines. A list of makes, models and locations is at Technical Exhibit (specify).

C.5.28.4.1 Rotating-Drum_Lubrication: The following components of a rotating-drum ice flaking machine should be inspected every three (3) months for adequate lubrication: compressor motor bearings, evaporator drum shaft bearings, ice cutter bearings, chain drive, and gear motor. Manufacturer's recommendations should be followed regarding type and frequency of lubrication. NOTE_TO_WRITER: The water system of ice flaking machines must be kept clean. Amount and frequency of cleaning water pan and/or evaporator drum depend on mineral content of supply water and on amount of dust and dirt present. However, the following operations should be performed at least once a month and more often if necessary: drain water from pan, defrost evaporator drum, and flush entire water circuit and refill. With certain types of supply water, mineral deposit in water pan is soft and may be removed by draining and flushing. When deposit becomes hard and adheres to surface of evaporator drum, the water system must be cleaned with acetic or citric

acid and the drum cleaned with a fine grade of water-type sandpaper.

C.5.28.4.2 Cleaning_Water_Circuit: The water circuit and interior of the pump shall be cleaned with acetic or citric acid. The freezing water circuit should be flushed periodically (specify) to reduce the frequency of more extensive cleaning. If the machine requires more extensive cleaning, a hot vinegar solution instead of a soap solution shall be pumped through the freezing water circuit. Ice must be removed from the storage bin prior to cleaning to prevent contamination. If heavy scale has accumulated in the freezing water circuit, an inhibited muriatic acid solution (1.5 parts of acid to 3.5 parts water) shall be circulated through the circuit for approximately 30 minutes. The circuit should then be flushed with a solution of baking soda and water followed by a flushing of hot water. Ice must be removed from the storage bin prior to the cleaning operation, and any ice that is produced during the first 15 minutes of operation after the cleaning operation must be discarded.

C.5.28.4.3 Cleaning_Evaporator_Drum: The Contractor shall clean the evaporator drum independently of the water circuit by using water-type sandpaper, or fine steel wool and soap.

C.5.28.4.4 Ice_Cutter_Adjustments: The Contractor shall maintain the appropriate clearance between ice cutter blades and the evaporator drum.

C.5.28.4.5 Scraper_Blade_Adjustment: The Contractor shall maintain the appropriate clearance between the scraper blade and evaporator drum.

C.5.28.4.6 Drive_Chain_Adjustment: The Contractor shall adjust proper tension to drive chain as required.

C.5.28.4.7 Stationary-Drum_Lubrication: The Contractor shall inspect the water pump, gear drive motor, and gear reducer monthly. The water pump and gear drive motor shall be oil using SAE 20 untreated motor oil. The gear reducer oil shall be replaced quarterly with an all-purpose gear or automotive transmission oil.

C.5.28.4.8 Cleaning_Water-Cooled_Condenser: The Contractor shall remove scale deposits on the inside of the condenser water circuit using an inhibited muriatic solution. for a minimum of 20 minutes followed by a baking soda solution for approximately 15 minutes to neutralized the acid.

C.5.28.4.9 Evaporator_Maintenance: The Contractor shall inspect the evaporator for proper alignment and remove scale from freezing surfaces.

C.5.28.5 Freezer_Chests_Maintenance: The contractor shall perform the following maintenance procedures on all

freezer chests. A lists of makes, models and locations is at Technical Exhibit (specify). The maintenance shall be performed (specify frequency based upon local conditions).

NOTE_TO_WRITER: Freezer chests are self-contained units used to store frozen foods for extended periods of time. Chests consist of insulated, hermetically sealed cabinets employing the same basic refrigeration system as domestic refrigerators. However, controls are set to operate at a lower temperature and cabinets are more heavily insulated. The evaporator of a freezer chest is expanded to provide cooling tubing wherever it is needed in the chest. Freezer chests operate at temperatures varying from 0 degrees F to minus ten (10) degrees F. Most freezer chests are of the chest or lift-top type or of the upright or reach-in type. The two (2) most common refrigerants used with freezer chests are Refrigerants R-12 and Refrigerant R-22.

C.5.28.5.1 Defrosting: The freezer chest shall be defrosted (specify) a year. The contractor shall remove frost by scraping with a wooden paddle or by brushing with a fiber brush.

C.5.28.5.2 Ice_Accumulation: The Contractor shall replace leaky gasket seals and adjust hardware if ice accumulation is observed.

C.5.28.5.3 Wax_Removal: The Contractor shall remove clogged refrigerant control valves using an approved solvent. Carbon tetrachloride will not be used as a cleaning solvent.

C.5.28.5.4 Cleaning: The Contractor shall clean the condenser (specify frequency) to remove dust and dirt. The Contractor shall insure sufficient clearance is provided around the cabinet to allow air to move freely over the condenser.

C.5.28.6 Dehumidifier_Maintenance: The Contractor shall conduct the following inspection and maintenance procedures on all dehumidifiers. A list of makes, models and locations is at Technical Exhibit (specify). The procedures shall be conducted (specify frequency), based upon local conditions. NOTE_TO_WRITER: Dehumidifiers are used to remove undesired moisture from the air. Equipment may consist of: cold coil surfaces over which air is blown and moisture condenses out when air contacts the coil, or chemical-type units. Chemical-type units are used in many industrial air-conditioning applications requiring either low relative humidity or low dewpoint temperature in a room.

C.5.28.6.1 Silica-Gel_Adsorption_Unit: The Contractor shall lubricate all moving parts to include the revolving drum which contains the silica-gel. The Contractor shall inspect and adjust the reactive chamber, remove dust and dirt, and replace the silica-gel (specify frequency).

C.5.28.6.2 Refrigeration-Type_Unit: The Contractor shall inspect and clean the coils and filters and lubricate the fan and motor bearings (specify frequency). The coils shall be cleaned using hot water, hot phosphate solution cleaner , or steam. Refrigerant must be pumped out of the coil, prior to cleaning, to avoid excessive pressure.

C.5.28.6.3 Dry_Desiccant-Type_Unit: The Contractor shall inspect adsorption-air and reactive-air fans, and lubricate the fan and motor bearings (specify frequency). The Contractor shall inspect the cycle counter, running-time meters and all controls to assure proper operation.

C.5.28.7 Air_Cleaning_Device_Maintenance: The Contractor shall inspect, clean, and/or replace filters when ever they become dirty and clogged. Frequency of cleaning and inspection will depend on the type of filter and system. NOTE_TO_WRITER: Air filters are used to remove dust and other contaminants from air streams. Viscous filters consist of a porous layer of coarse material coated with a viscous substance, such as oil or grease. Filtering material may be steel wool, wire screen, animal hair, hemp fibers, glass fibers, or similar material. The grease or oil is odorless and nonflammable. Air passes through the filter and makes several changes of direction as it flows through. This causes dirt or dust particles that are present in the air to pass over the surfaces of the

filtering material and be entrapped by the viscous fluid. As dirt collects on the oil-covered surfaces, resistance of the filter to passage of air is increased, thereby requiring periodic removal and cleaning of the filter. Viscous filters may be the cleanable type or throwaway type.

C.5.28.7.1 Viscous_Filters: The Contractor shall replace or clean viscous filters depending on the manufacturer's instructions. Viscous filters designed for cleaning shall be washed, dried, and dipped in a clean oil bath. The Contractor shall follow the manufacturer's recommendations regarding type of oil to be used.

C.5.28.7.2 Grease_Filters: The Contractor shall clean grease filters by manually cleaning them in hot soapy water.

C.5.28.7.3 Electrostatic_Filters: The Contractor shall clean electrostatic filters according to the manufacturer's instructions.

C.5.28.8 Evaporative_Cooling_Maintenance_for_Drip-Type Type_and_Rotary-Drum_Coolers: The Contractor shall conduct the following inspections and maintenance procedures on all evaporative cooling units. A list of makes, models, and locations is at Technical Exhibit (specify). The procedures shall be conducted (specify frequency). NOTE_TO_WRITER: Evaporative cooling depends on evaporation of water, thereby

increasing relative humidity of air, its use is confined to areas having a low wet bulb temperature, a high dry bulb temperature and therefore, low relative humidity. Evaporative cooling is particularly effective in areas such as the arid regions of Southwestern United States. For many applications, whenever outdoor wet bulb temperature is 73 degrees F or lower, effective cooling and indoor comfort can be maintained by evaporative cooling. Frequently, some compromise in room conditions must be made to utilize evaporative cooling. Compromise usually results in a higher relative humidity than that recommended for designs employing air-conditioning. Evaporative cooling should not be utilized to cool air for spaces requiring constant temperature and humidity control, such as hospital operating rooms. Mechanical air-conditioning units, which are not dependent on outdoor atmospheric condition for proper operation, should be used for such purposes.

C.5.28.8.1 Drip-Type_Cooler_Pads: The Contractor shall inspect and clean the evaporating surface pads (specify frequency) and remove algae, water solids, pollen, and other deposits. Pads should be replaced (specify frequency) during the cooling season.

C.5.28.8.2 Recirculating_Pumps: The Contractor shall inspect each pump (specify frequency) to determine if the shafts turns freely and that the motor starts easily. Each pump

shall be oiled (specify frequency) because they have a low oil capacity. The Contractor shall clean the water impeller, volute, and interior and exterior of the water discharge pipe by wire-brushing to remove scale. All rusted areas shall be wire-brushed and repainted with rust-preventive paint.

C.5.28.8.3 Water_Distributors: The Contractor shall adjust the trough to insure that approximately the same number of drops of water fall from the weirs to insure that the pads are thoroughly saturated. The troughs shall be cleaned and repainted with asphalt paint (specify frequency).

C.5.28.8.4 Water_Make-up_Valve: The Contractor shall check the float-actuated water make-up valve for freedom of movement, and correct any binding of the float lever of the water valve stem (specify frequency).

C.5.28.8.5 Rotary-Drum_Air-Filter_Unit : The Contractor shall clean or renew filters (specify frequency). The electric gear motor and rotor bearing shall be lubricated IAW the manufacturer's instructions.

C.5.28.8.6 Slinger-Type_Coolers: The Contractor shall inspect and clean the spray wheel assembly (specify frequency). The spray wheel motor shall be lubricated IAW the manufacturer's instructions.

4. General_Tasks_and_Standards_Examples. The installation should carefully consider any related administrative services

and require only those that are necessary. The general tasks and standards listed below should be inserted in paragraphs C.1 through C.5 of the contract, or in the Special Contract Requirements Section (SECTION H) as applicable. NOTE_TO_WRITER: A local decision is required as to extent of the review in the management area. It is recommended that the Government receive and assign priority to all repair work (work order control desk), as a Contractor will not normally be aware of Government's plans to upgrade, change, or alter, etc., equipment or facilities. The enclosure to HQDA LTR 420-85-3 provides examples for prioritizing work. However, this interface should be limited to that needed for efficient, effective service. (See OFPP PAM #4 (Part II of supplement to OMB Cir. A-76) for PWS format.)

C._ Service_and_Maintenance_Management: The Contractor shall provide all services and maintenance management required to perform the work and meet all performance standards as specified. Standards may be specified in the performance statements or attached performance statements summary tables. Where publications containing additional standards are advisory in nature IAW reference, acceptance of the work shall be based upon the reasonable and logical judgment of the Contracting Officer using the standards as guidance. The Contractor shall be aware of improvements in state-of-the-art for all RPMA

functions covered under the contract. Such awareness is a necessity if the Contractor is required to advise the DPW as to best means to resolve RPMA operational, maintenance, and repair problems in the most economical manner possible.

C._ Inspections: The Contractor shall make a comprehensive inspection of all facilities, and submit a preventive maintenance (PM) service plan along with the Contractor's QC plan and annual work management plan not later than (specify). The preventive maintenance plan shall list all PM schedules and discrepancies found and all work anticipated for maintenance or repair of the facilities. Each subsequent 12 months thereafter during the contract period, to include any extensions of contract term, the Contractor shall make an additional inspection of the total facilities and update the annual work management plan (specify minimum/maximum interval). The Contractor shall make additional inspections as necessary to provide that all contract work is accomplished as specified. Inspection files shall be prepared and maintained by the Contractor which shall reflect past and current inspection dates, results of all inspections, corrections required, and corrections made. If corrections have not been made, the file shall include a schedule for completion of required work and provide an acceptable explanation to the Contracting Officer as to why corrections have not been made, to include BMAR (that

work delayed by the DPW). Current Government inspection files will be turned over to the Contractor on contract start date. (See FAR 52.246-1 and 52.246-4 or other applicable clause of FAR and its supplements and reference applicable inspection clauses).

C._ Staff_Visits: The Contractor is advised that HQDA/MACOMs often conduct staff visits to the installation, to include functional areas covered under the contract. These visits usually result in recommendations for improvements deemed necessary to enhance the overall mission. In addition, the visits may require support such as providing knowledgeable personnel to tour and inspect the areas. The Contractor shall provide support, as necessary. These visits are estimated to occur (specify) times per year. Recommendations for improvements of areas or work which are the Contractor's responsibility shall be implemented as directed by the Contracting Officer.

C._ Contractor_Contact_with_Government_Personnel,_Caution to_Contractor: The Contractor is advised that any work at the direction of unauthorized Government personnel, or without an approved DPW authorization (SOO, SO, IJO) will not be credited as work accomplished under the contract. All RPMA work will be controlled and monitored by the Government by use of SO, SOO, or IJO documents as defined in C.2 and the Contractor's schedules.

The Contractor responsibility for use of these documents is set forth in (insert applicable requirements). The Contractor is further cautioned that failure to provide work schedules as specified will result in a determination that required work was not performed and no payment will be made due to the Government's inability to verify performance.

C._ Work_Control:

C._._ The Contractor shall receive from the Government, schedule, and perform all work IAW all terms and conditions contained in the contract. The Contractor shall develop and provide all specified written plans and schedules. The Contractor shall develop and provide a comprehensive, detailed maintenance schedule for daily, weekly, biweekly, monthly, quarterly, semiannually, and annually startup and shutdown work. The Contractor's schedules shall reflect current maintenance document recommendations (to include manufacturers' maintenance recommendations and instructions). All tasks shall be listed and performed IAW these recommendations and the Contractor's schedules. All schedule(s) shall be kept current. Work schedules shall be provided to and shall be subject to Contracting Officer review and approval (Ref. SECTION F).

C._._ The Contractor shall provide a local telephone number, or a long-distance telephone number with reverse charges, as applicable, that is answered 24 hours per day, seven

(7) days per week, at which the Contractor can be notified of emergency work. The Government shall not be expected to call a series of phone numbers in order to locate the Contractor or the Contractor's designated representative. FAILURE TO MAINTAIN ACCEPTABLE COMMUNICATION CHANNELS SHALL BE UNSATISFACTORY SERVICE. (Installation will insert any necessary time frames.) NOTE_TO_WRITER: Repetitive work should be scheduled by the Contractor at the same time period on each consecutive day work is scheduled to be performed. If repetitive work can be measured without scheduling, do not specify. Contractor should only be required to schedule tightly if necessary to contract surveillance. A complete preventive maintenance program must be developed and specified by Government, IAW DoDI-4165-64, dated 23 May 1985.

C._._ The Contractor shall inspect, schedule, control, and perform all work covered by the fixed-price portion of the contract IAW the Government established priority. Contractor-initiated level III work shall be initiated by job order request (JOR-DA-Form 4283). This form shall be submitted by the Contractor to the Contracting Officer for further action.

C._._ The Contractor shall receive requests for estimates or firm fixed prices, as applicable, for Level III work within contract scope for negotiation purposes under the indefinite delivery portion of the contract. The Contractor shall provide

accurate and complete response to such requests within five (5) workdays unless additional time is granted, in writing, by the Contracting Officer.

C._ Weekly_Schedules: The Contractor shall submit detailed functional area schedules of work covering the following week NLT the (specify) day of the current week. Each functional area schedule shall include preventive maintenance schedules for the function's equipment and systems to be maintained. The first weekly schedules shall be submitted NLT ten (10) workdays prior to commencement of work. The schedules shall indicate what, when, and where required work is to be accomplished. The Contractor shall attend scheduled maintenance meetings with the DPW (specify needs) to assist in development of mutually compatible work schedules. The Contractor shall work to the schedules. Revisions or changes to any schedule shall be submitted (specify time frame) in advance and shall indicate reason for any revision or change. All revisions and changes are subject to Contracting Officer review and approval prior to implementing such revision or change. Contracting Officer approval/disapproval may be oral or in writing, depending on the occasion. The Contractor will be notified (specify) days in advance of any unscheduled meetings.

C._ Reports: The Contractor shall provide all reports described herein and in Technical Exhibit (specify). Unless

otherwise specified, two (2) copies shall be provided to the Contracting Officer.

C._._ Report any circumstances of needed repair of the facilities, unusual soiling of an area, unhealthy or hazardous conditions, or any delays or interference of work by Government employees. Such reports shall be made as expeditiously as possible to the Contracting Officer.

C._._ Report to the Contracting Officer all personal articles found by the Contractor or the Contractor's employees. Found articles shall be turned into the Provost Marshal's Officer by the Contractor within one (1) working day.

C._ Records_and_Filing_Systems: NOTE_TO_WRITER: See Notes to Writer (page 37) concerning IFS prior to writing this part. Be specific and detail file and records requirements. Specify "who" in Government will be authorized to request work, etc. Files and records must be held to minimum required. See notes on Page C-36 to determine report requirements. All files/filing requirements must be listed on the CDRL (DD 92 Form 1423) or other applicable listing.

C._._ The Contractor shall prepare and maintain complete and accurate operating, maintenance, and repair reports submitted by the Contractor to the Contracting Officer of all work IAW (specify). (Do not require records, files, etc., where work is Contractor responsibility.) NOTE_TO_WRITER: Project

files will be maintained by the Government residual management staff as required by AR 420-17 (page 3-1, para. 3-8), "Establishment of Official Project Files." A project folder is required for construction costing more than $15,000 or maintenance and repair costing more than $50,000. The residual staff will also maintain SO, SOO, and IJO documents and operate and maintain IFS.

C._._ The Contractor shall maintain complete and accurate equipment and facility records and files.

C._._ Completion of all forms and/or reports listed within the contract is required. All necessary blank forms will be provided by the Contracting Officer. If completed forms and/or reports are not submitted within the established timeframes, or if the submitted copies are incorrect or incomplete, the Contracting Officer may, in addition to any other rights of the Government under the contract, withhold payment of any monies due to the Contractor, in full or in part, until correctly completed documents have been submitted.

C._._ The Contractor shall provide to the Contracting Officer, markup drawings or other requested information for updating real property records. Markup drawings shall be legible and shall include in detail any update. This documentation is required when ever any alteration or reconfiguration of an existing system is made. All drawings

shall be made on standard size sheets made to applicable drafting standards (specify standards or state where found.) (Ref. FAR 36l.102)

C._ Utility_Operating_Files_and_Logs: The Contractor shall maintain operating logs and an operating log file on equipment identified in Technical Exhibit (specify). The logs shall be retained for a minimum of two (2) years unless otherwise specified by the Contracting Officer. All operating files and logs shall be turned over to the Contracting Officer upon contract completion or termination.

C._ Supply: The Contractor shall: (If supply system remains inhouse, specify how the Contractor will interface with Facilities Engineering Supply System (FESS); e.g., by providing input data. Insert data required.)

C._._ Maintain the Government-furnished supply items. Maintain records to provide accountability of any Government supply items. (Specify any necessary minimum levels of stockage.)

C._._ When repair parts can only be obtained from Government sources, request repair or replacement parts through the military supply system by filling out DD Form 1348, DA Form 3953, or other applicable forms (specify other forms). Procedures and methods to be used, and list of parts and

supplies available only through the military supply system are shown in attachment (specify). (Ref. FAR 52.251-1)

C._._ Inspect shipments of new equipment or repair parts provided by the Government upon receipt to verify that all parts are present and that needed items have been delivered as requested. Any discrepancy in such shipments shall be reported to the Contracting Officer, in writing, within (specify) from time of receipt. (Installations will not require a Contractor to inspect or accept, for the Government, shipments from other Contractors. This is a Government responsibility.)

C._ Equipment_Replacement_(Government_Property): If an item of Government property is determined by the Contractor to be beyond economical repair, the Contractor shall recommend to the Contracting Officer in writing that such equipment be replaced. Substantiating data to support the recommended replacement shall be included. If the Contracting Officer agrees that such equipment should be replaced or repaired, and replacement or repair is authorized, the Contractor shall accomplish the work IAW the appropriate work level criteria. The Contractor shall prepare DD Form 1348-1 for property disposal.

C._ Salvage: The Government retains all salvage rights to replaced property of value. The Government will determine

value. The Contractor shall prepare DD Form 1348-1 for property disposal.

C._ Personnel:

C._._ The Contractor shall act as, or provide, a project manager physically present on site, except on legal public holidays, during the hours (specify) through (specify), Monday through (specify). The project manager shall conduct overall management coordination and shall be the central point of contact with the Contracting Officer for performance of all work under the contract. Another individual may be designated to act for the project manager when work is being performed at hours other than as listed above or during absences such as illness, vacation, etc. Advance notice of such change shall be provided to and reviewed by the Contracting Officer. The project manager, and any individual designated to act for him, shall have full authority to contractually commit the Contractor for prompt action on matters pertaining to Contractor administration of the contract. The project manager (and any alternate) shall be able to understand, speak, read, and write the English language. (If manager(s) are required to be on site at times other than normal duty hours for emergencies, etc., specify requirements.) NOTE_TO_WRITER: Any certification or other personnel qualifications (not Contractor experience) should be listed. If a project manager is required in more than one (1)

functional area, reword the paragraph as appropriate. Consolidate and include training requirements in one (1) paragraph. Where the Contractor is required to train Government personnel, the specific training tasks should be consolidated under one (1) heading and included as appropriate.

C._._ The Contractor shall provide all necessary personnel to accomplish all contract work or service within specified time frames. This provision shall apply notwithstanding past historical records, estimates of personnel needed, or any minimum levels established elsewhere herein to include any contractor proposal incorporated by reference. All personnel utilized under the contract shall be legal residents of the United States. Contractor personnel performing the following duties shall be U.S. citizens (DPW will identify the applicable positions and document the file
to show why only U.S. citizens can perform).

C._._ The Contractor shall provide a sufficient number of trained, qualified personnel to perform all of the services required by the contract.

C._._ Prior to the contract start date (specify), the Contractor shall provide a list of all employees who will perform work under the contract to the Contracting Officer. The list shall include the full name, Social Security number, and work assignment of each employee. The Contractor shall notify

the Contracting Officer in writing, of any addition, deletion, or change in work assignment within five (5) working days (before/after) the change. Each of the Contractor's employees shall conspicuously display a badge on themselves which shall include the full name of the employee, the legal name under which the Contractor is doing business and a badge serial number. The Contractor shall provide all employee badges.

C._._ All Contractor employees shall abide by those publications listed as mandatory in paragraph (specify). The Contractor shall also comply with all applicable Federal, State, and local laws and regulations. Copies of installation rules and regulations will be made available by the Contracting Officer and posted in the Contractor's office.

C._._ The Contractor shall provide uniforms for (insert functions requiring uniforms) and rank insignia of a style and color (specify acceptable types) approved by the Contracting Officer. The uniforms shall be maintained so as to provide acceptable appearance at all times. (Specify that the Contractor shall be responsible for uniform maintenance and establish acceptable appearance standards: delete rank insignia if not needed.)

C._ Contingencies: The Army must plan, in advance, how it will meet mission requirements in event of a national emergency or natural disaster. The Army must be able to react to such events

without undue delay. Sudden or unusual events could impact upon the Contractor's performance and contract requirements. In the event that unusual conditions as specified below develop, the Con tractor shall continue, and expand if necessary, contract performance. In the event that a national emergency or national disaster occurs and results in an increase of work directed by the Contracting Officer, and an increase in cost of performance, such increase will be subject to the Contract Clause entitled "CHANGES." (AR 210-10, Change 2, spells out some contingency plans.) (Ref. SECTION L)

C._._ A sudden build-up of military forces increases contract requirements.

C._._ A natural disaster occurs which impacts upon Contractor's ability to perform.

C._._ A strike occurs which impacts upon the Contractor's ability to perform (insert other events identified by the installation).

C._._ In all cases, the Contractor shall assume that the Army cannot provide any supplemental forces and will continue to need the same or additional performance under the contract, which the Contractor shall be required to meet. NOTE_TO_WRITER: Contingency requirements, on a case-bycase basis, must be established at each DPW. The activity must prepare a contingency plan that addresses what course of action should be

taken under such circumstances. The Contracting Officer will then be in a position at the time of emergency to define what is needed and direct the Contractor to take necessary action, based on the emergency condition. Specify any Contractor responsibility to provide update or recommended changes in operations, which will affect spill plans or improve military operations. Any recommended changes should indicate value engineering reason. Development of contingency plans is a Government responsibility. (See AR 5-20 for policy on mobilization contingencies.) Draft Contractor contingency plans should be required with bid/offer and specified in SECTION L of the solicitation.

C._ Disasters: In the event that GFP is damaged by events of a disastrous nature, such as flood, cyclonic wind, fire, or if the Contracting Officer determines that disaster response action is necessary to protect GFP from such damage, the Contracting Officer may direct the Contractor to perform work to protect such GFP. The Contractor shall respond to such disaster work requests from the Contracting Officer within one (1) hour during normal duty hours and within two (2) hours during non-duty hours following receipt of request. When disaster response work is directed by the Contracting Officer and performed by the Contractor, the contract price may be adjusted pursuant to the "Change" clause of the contract.

C._ Emergencies: The Contractor shall respond to requests for emergency service from the Contracting Officer within one (1) hour during normal duty hours and within two (2) hours during non-duty hours following receipt of request. (Emergencies normally arise as the result of adverse weather, such as a heavy rainfall or extreme windstorm, and the Government anticipates that no less than (specify) and no more than (specify) such requests will be made each year, with an annual average of (specify events).

C._ Security_Requirements: The Contractor shall comply with all applicable installation security requirements (specify where found). The Contractor shall submit the name, SSN, and address of specified employees working under the contract and shall fill out questionnaires or other forms as may be required for security purposes (as shown below) (as shown in attachment (specify)). (Ref. DoD 5220.22R and 5220.22M)

NOTE_TO_WRITER: Specify applicable security regulations, instructions, directives, SOPs (as information only), etc. Identify to specific facilities or positions. Include, or provide attachment, clear, concise instructions as to method for obtaining security clearances. Specify clearance level(s). Include a statement that if the Contractor fails to obtain and maintain security clearance that "watchers" will be provided by the Government, one on one, at Contractor's cost. Establish

such cost. This will provide incentive to obtain and maintain clearances as such "watchers" would be expensive. Note, however, that many Army activities have requested security clearance under the Defense Industrial Security Programs (DISP) for Contractors who do not require access to classified information, but must work within restricted areas. A suitability investigation should be requested IAW para. 3-601, AR 604-5 (DOD 5200.2-R). A security clearance under the DISP is not a license for access to classified information or a substitute for security measures designed to prevent unauthorized access.

C._ Physical_Security: The Contractor shall develop and implement a security program to control access to GFP on a 24-hour day, seven (7)-day-a-week basis to prevent unauthorized entrance, vandalism, pilferage, larceny, sabotage and fire; and to provide adequate internal safeguards for the security of all GFP under the contract.

C._ Access_to_Installation: The Contractor and his employees while on the (installation) (post) (fort) (reservation), are subject to all law enforcement requirements. If problems are encountered with access to areas, stations, sites, etc., the Contractor may contact one (1) or more of the following: (include name, section, telephone and duty hours).

C._ Contractor_Notification: The Contractor shall establish a communication system such that his project manager or an individual designated to act as the project manager can be contacted at any time by the Contracting Officer within one (1) hour from the initiation of notification. As a minimum, such a system shall include the names and home telephone numbers of three (3) such individuals.

C._ Vehicle_Registration: The Contractor shall obtain, and shall require Contractor personnel to obtain vehicle passes/decals from the Provost Marshal prior to commencement of contract work on the Government installation IAW (insert installation regulation or instructions). Vehicle passes/decals shall be returned by the Contractor to the Provost Marshal within (specify) hours when any employee is no longer in the services of the Contractor. All passes/decals shall be returned upon completion or termination of the contract. The Contractor shall maintain records of licenses of heavy equipment operators in order to verify and document operators' skill in using heavy equipment. NOTE_TO_WRITER: A draft Contractor Quality Control Program (QCP) may be required along with an offer if needed by the Contracting Officer to utilize in his determination of responsibility of the Contractor for a RFP. A draft Contractor QCP may be required for an IFB not later than (specify days) after award. DoD directive 4155.1 should be used as a guide to

write QC requirements. (Ref. FAR Part 46, and DFARS Part 246.102 "Policy")

C._ Contractor_Quality_Control_Program: The Contractor shall establish and maintain a QCP which ensures that all requirements of the contract are met as specified. Work will be permitted only after review and acceptance of the QCP, or at least review of that portion of the plan applicable to the specific feature of work. At the discretion of the Contracting Officer, no work shall be performed nor any invoice be processed under the contract until the entire QCP has been reviewed and accepted. (If allowed to perform, the Contractor must be paid for any work performed satisfactorily. Payment will not be withheld in such instance. Do not allow Contractors to determine your needs for you.) (Ref. SECTION F)

C._ Quality_Control_Program: For an RFP, a copy of the Offeror's draft Quality Control Program (QCP) must be submitted along with the offer. The responsibility includes providing inspection and inspection reporting, systems testing as required by the contract, providing survey control, preparing as-built drawings, maintaining inspection and system testing documentation, including off-site quality control records such as manufacturer's certificates of compliance, and submitting copies of all contract documentation to the Contracting Officer. The QCP shall include as a minimum the following:

C._._ Confirm when and where routine testing will be required and arranging with the laboratory to have tests performed.

C._._ Provide lab personnel with needed information.

C._._ Witnessing all testing and verifying that requirements were followed.

C._._ Arrange for specialist assistance for witnessing testing, as required.

C._._ Record all testing on a Daily Construction Report or other required reports as required.

C._._ Document all areas of nonconformance.

C._._ Maintain copies of test results, inspection reports, certification papers and permits.

C._._ Verify that testing devices are calibrated.

C._._ Coordinate site activity.

C._._ Visual inspection of all items not requiring laboratory testing.

C._._ Prepare and maintain inspection checklists.

C._._ Provide methods of identifying deficiencies in the quality of services performed before the level of performance becomes unacceptable.

C._._ Methods of documenting and enforcing QC operations of both prime and any subcontractor work, including inspection and testing.

C._._ Methods for key control.

C._._ Construct the QCP in such a manner that each functional area plan may be extracted and used for that function only and not contain information extraneous to that function.

C._._. All key personnel of the Contractor's organization shall be identified and their authority, or lack of authority under the contract, shall be clearly defined.

C._._. A quality control (QC) inspection system covering all general and specific tasks included in the contract scope of work. Tasks or areas to be inspected on either a scheduled or unscheduled basis, and the manner in which inspections are to be conducted will be specified.

C._._. The names of firms or individuals tasked to perform inspections and the extent of their authority. An organization chart or other approved form will show this information.

C._._. Proposed test methods, including names and certifications or licenses of technicians and qualified testing laboratories to be used.

C._ Quality_Assurance: The Government will monitor the Contractor's performance under the contract using criteria specified in SECTION E (Performance Requirements Summary). The Government reserves the option to implement whatever surveillance plan it considers appropriate, and to modify that plan as applicable.

C._ Acceptability: The Contractor's work and any services performed shall be accepted only when in full compliance with the clause entitled "INSPECTION OF SERVICES-FIXED PRICE" (FAR 52.2464). For purposes of acceptance, the Contractor's QC program will be considered as work or service and shall be subject to acceptance throughout the term of the contract, to include any extensions of contract term. The Contractor shall notify the Contracting Officer in writing of any proposed change to the QC program. No change shall be implemented prior to review by the Contracting Officer.

C._ Performance_Evaluation_Meetings: The Contractor shall meet with the Contracting Officer (insert weekly, monthly, etc.) during the first (specify) days. Meetings shall be held thereafter as determined necessary by the Contracting Officer. However, a meeting shall be held within (specify) hours when a Contractor's Deficiency Report (CDR) is issued. Mutual effort will be made to resolve any and all problems identified. Written minutes of these meeting shall be prepared by the (Government) (Contractor) and shall be signed by the Contracting Officer, the Contractor, or their designated representatives, as appropriate to the occasion. Should the Contractor not concur with any minutes, he shall so state, in writing.

C._ Installation_Closures: When an unforeseen installation closure occurs on a regularly scheduled workday, the Contracting Officer shall have the following options:

C._._ Reschedule the work to be performed the following day unless the following day is a weekend day and routine work is not scheduled on Saturday or Sunday.

C._._ Reschedule the work on any day mutually satisfactory.

C._._ When mutually agreed, to forego the work and reduce payment due the Contractor accordingly for work not performed. (Insert applicable installation procedures. the Contractor may be required to pay Contractor personnel under such circumstances. Care must be taken to ensure that the Contractor will not incur a loss in such event.)

C._ Hours_of_Operation: Routine inspection, maintenance, and repair work shall be accomplished during normal duty hours from (specify) to (specify) hours, Monday through (specify) excluding legal public holidays. Operation of plants or systems shall be accomplished as specified in each functional area. Where operators of Government facilities or equipment are required at other than the above normal duty hours, the Contractor shall comply with the specific operational requirement (reference specific paragraphs).

C._ Response: Emergency repair or maintenance work shall be accomplished whenever required, and shall be carried to removal of the emergency situation without interruption, notwithstanding normally scheduled working hours, weekends, or holidays. Response to emergency service calls during off-duty hours shall not exceed (specify) hour(s), regardless of the time during the day or night, weekends or holidays. Emergency service call response time, except fire prevention services, during normal duty hours shall not exceed (specify) (minutes) (hours). Response to urgent calls shall not exceed (specify) (hours) (days) and response to routine calls shall not exceed (specify) days. Response, as used in relation to service calls, means the Contractor's work force is at the work site ready to commence required work. The Contractor shall comply with all Government established priorities.

C._ Legal_Public_Holidays: Except as otherwise specified, routine work shall not be scheduled on holidays or days observed in lieu thereof. When a service is required less than three (3) times per week and the schedule for that work falls on a holiday, the work shall be accomplished on the day following or preceding the holiday. (Ref. 5 USC 6103(a))

C._ Key_Control: The Contractor shall establish a control system to ensure that no keys issued to the Contractor by the Government are lost, misplaced or used by unauthorized persons.

Government keys shall not be duplicated by the Contractor without Contracting Officer approval in advance. Procedures developed to control Government keys shall be included in the Contractor's QC plan. The Contractor shall:

C._._ Reimburse the Government for replacement of locks or rekeying required as a result of the Contractor losing any key. In the event a master key is lost or found to have been duplicated, all locks and keys for that system shall be replaced by the Government and the total cost charged against the Contractor.

C._._ Report any occurrence of lost key(s), as expeditiously as possible to the Contracting Officer. In no event shall the
report be later than the beginning of the next workday.

C._._ Prohibit the use of keys issued by the Government by any person other than authorized Contractor employees. The Contractor shall not permit entrance to locked areas to any person other than Contractor personnel engaged in the performance of work in those areas without written authorization by the Contracting Officer.

C._ Handling_Hazardous_Material: NOTE_TO_WRITER: The Government should have a developed plan if applicable. The requirement for this plan depends on the presence of equipment at the installation that uses insulating liquids or other toxic

materials. A plan is not required if such equipment and liquids are not used. Environmental Protection Agency (EPA) regulations cover toxic materials. Specify all Contractor requirements. Include all toxic materials. (Hazardous material is defined in Federal Standard No. 313A. A separate guide was developed for TRADOC covering asbestos containment or removal. If needed, copies should be requested from the TRADOC Engineer). See AR 420-27 to develop waste management requirements. (Ref. FAR 52.223-3)

C._ Energy_and_Utilities_Conservation_Programs: The Contractor shall comply with the installation energy conservation plans and AR 11-27, participate in energy conservation activities, and make suggestions to the Contracting Officer on activities and improvements to promote efficient use of all energy. The Contractor should evaluate and recommend measures that can be taken to: NOTE_TO_WRITER: The installation must establish a specific goal for energy conservation based upon installation requirements. Use and need for plans or programs will depend on extent of similar past work,
anticipated value of expected results, type of contract, specific vendors expected to make an offer, and practicality. Require the Contractor to designate an individual responsible for energy conservation matters. This is an in-house

responsibility; consider and use the following as appropriate to specify any Contractor responsibility.

C._._._ Reduce general operating costs.

C._._._ Minimize energy losses.

C._._._ Add insulation or make other changes for savings.

C._._._ Use timing or cycle control devices to promote energy savings.

C._._ (If an energy plan is available, it should be referenced in the PWS. If a plan is not available, list the key requirements.) The Contractor shall:

C._._._ Train Contractor personnel to conserve energy by turning off unneeded equipment. Controls for heating, ventilation, and air-conditioning systems shall not be adjusted by unauthorized workers.

C._._._ During the summer season, the controls shall be set to hold dry bulb temperatures not lower than 78@F during working hours except in critical facilities.

C._._._ During the winter season, the controls shall be set to maintain dry bulb temperature not higher than 65@F during working hours and shall be set to maintain dry bulb temperature of not more than 55@F during nonworking hours except in critical facilities.

C._._ The Contractor shall instruct Contractor's personnel in utilities conservation practices, and shall require them to operate under conditions which preclude waste of utilities. The Contractor's instructions and programs shall include the following:

C._._._ Use of lights only in areas where work is actually being performed.

C._._._ Water faucets, valves, and equipment shall be turned off after required usage has been accomplished.

C._._._ Government telephones shall not be used for personal reasons nor any toll or long-distance calls.

C._._ Consider the following when developing requirements:

C._._._ Preparation of annual updates to the installation Energy Plan.

C._._._ Recommendations for energy conservation measures.

C._._._ Preparation and input of energy consumption and energy related data into the Defense Energy Information System (DEIS). This must be done twice each month.

C._._._ Analysis of energy consumption and energy related data each month and discussion at energy council meeting. A quality analysis must be presented to the commander.

C._._._ Conduction of energy awareness week the last full week of each October.

C._._._ Prioritizing work orders that will result in energy or cost savings.

C._._._ Consideration of energy consumption and cost when purchasing equipment.

C._._._ Performance of all duties as prescribed in para. 151 AR 11-27 and performance of energy conservation IAW para. 1-6 and 1-7 of AR 11-27.

C._._._ Performance of program requirements described in AR 11-27 except Energy Research and Development.

C._._._ Operation of EMCS and in times of peak load, cycle, or de-energize enough energy consuming equipment to attempt to prevent a new high peak demand.

C._._._ Monitor and maintain the installation power factor at approximately 0.90 to 1.00 or at the level which does not result in a penalty from the public activity.

C._ Interfaces:

C._._ The Contractor shall comply with all restricted areas' procedures and instructions. Contractor personnel working in restricted areas such as computer rooms, command communication center, etc., may be required to sign in and out and state the nature of business at the entrance desk. Work in restricted areas after normal duty hours shall be coordinated

with the respective restricted area Security Officer through the Contracting Officer.

C._._ Government personnel will be working in office areas during working hours. Contractor operations shall not unduly interfere with Government work in the area where any service or maintenance work is being performed. In event Government office managers so request, the Contractor shall temporarily cease work in these areas and report the instructions to include names and telephone numbers of the Government personnel involved to the Contracting Officer by the most expedient means. The Contracting Officer will then direct the Contractor as to how to proceed with contract operations. Only the Contracting Officer can authorize a work stoppage. Failure by the Contractor to notify the Contracting Officer and receive necessary instructions could result in an unauthorized work stoppage.

C._ Warranties:

C._._ The Contractor shall exercise all existing manufacturers' commercial warranties on Government equipment on the Government's behalf. The Contractor shall report any difficulty in exercising manufacturers' warranties to the Contracting Officer and request assistance as necessary. Current existing warranties are listed in attachment (specify).

C._._ Equipment installed by the Contractor that fails within a warranty period due to poor workmanship or by not

following manufacturers' installation or operating instructions shall be replaced or repaired at the Contractor's expense. This determination will be made by the Contracting Officer.

C._ Environmental_Program:

C._._ The Contractor shall comply with all applicable Federal, State, and local laws, regulations, and standards (specify where found) regarding environmental pollution. All environmental protection matters shall be coordinated through the Contracting Officer with the Post Environmental Protection Coordinator. The Post Environmental Protection Coordinator is located at (specify), telephone (specify) (etc.).

C._._ Any of the Government facilities operated by the Contractor may be inspected by the Post Environmental Protection Coordinator, or other Federal, State, or local officials on a short-notice basis. Access for inspection shall be granted upon notice from the Contracting Officer. The Contractor will be provided (specify) hours advance notice of such visits by the Contracting Officer. (All official visitors must be controlled through the Contracting Officer in order to preclude, or prevent, undue interruption of a Contractor's operations.)

C._._ Citations against Government facilities operated by the Contractor for noncompliance with environmental standards are a matter for resolution between the installation representatives and the issuing office of EPA or State of

(insert) Regulatory Authorities. Payment of fines or penalty charges associated with citations issued by Federal, State, or local officials shall be paid by the Government. If the citations are issued due to faulty operation or maintenance practices by the Contractor, the Contracting Officer shall deduct the fine from any moneys due the Contractor.
NOTE_TO_WRITER: The installation must develop and maintain spill contingency plans and provide equipment/material to meet EPA response requirements. If local plans are available, these may be referenced. Indicate any responsibility the Contractor will have concerning spills. (Do not attach bulky plans or SOPs; reference and provide a central location for potential Contractor's review purposes.)

C._ Environmental_and_Occupational_Safety_and_Health: The Contractor shall be fully responsible for compliance with all local, State, and Federal environmental/occupational safety laws, rules and regulations. This responsibility includes being financially responsible for any fines, citations, litigation and/or long-term corrections which result from the performance of work required in the contract. Any apparent conflict between compliance with the above information and satisfying the requirements of the contract shall be immediately brought to the attention of the Contracting Officer for resolution, prior to the performance of the work in question.

C._ General_Tasks: The Contractor shall plan, program, coordinate, estimate, respond to the Government schedule, and evaluate resources for work requests approved by the Contracting Officer for performance by the Contractor. Work management shall include maintaining a suspense system with appropriate registers and files, and routing and distributing reports.

C._ Levels_of_Work: The Contractor shall perform all work required by the contract within the following three (3) work category:

C._._ Work_Level_I: Work Level I includes scheduled and unscheduled work and services. Scheduled service includes operating utility plants, performing recurring preventive maintenance, and performing start-up/shut-down maintenance on equipment and facilities. Unscheduled Level I work includes service orders for minor construction or alteration, and unscheduled maintenance/repair and service work which does not exceed 24 manhours of labor and/or (specify dollar amount) for materials per service order. Equipment rental for all Level I work is the Contractor's responsibility. Workload data for unscheduled Level I (service orders) is shown in Technical Exhibit (specify). Any work which is determined to exceed 24 hours labor and/or (specify dollar amount) will be handled as Level II or III work.

C._._ Work_Level_II: This level of work is established for maintenance and all other service work which exceeds Level I, but is less than (specify dollar amount)(labor, equipment and materials). Level II work includes construction, alteration, repair and new work under (specify dollar amount). Material and equipment rental costs are reimbursable. This work shall be accomplished by the Contractor only when ordered by the Contracting Officer, except as specified for emergency work. Level II workload data is shown in Technical Exhibit (specify).

C._._ Work_Level_III: This level of work is established for construction, alteration and repair of facilities which exceed Level I, but is less than (specify dollar amount) (labor, equipment and materials). All Level III work is subject to the provisions of the Davis-Bacon Act and shall be accomplished by the Contractor only when ordered by the Contracting Officer.

C._ Service_Order_Priorities: The Contractor shall maintain a point of contact (POC) and telephone number on-post to receive emergency, urgent and routine work requests during normal work hours (specify). The Contractor shall maintain a POC and telephone number on-post to receive all emergency work requests 24 hours a day, seven (7) days a week, including holidays.

C._._ Emergency (Priority 1): Work which takes priority over all other work orders and requires immediate action,

including diverting workers from other jobs, if necessary, to cover the emergency. Usually, the work is necessary for protection of health, for safety, or security of sensitive Government property, or to prevent damage to property.

C._._ Urgent (Priority 2): Work to be accomplished by the first available worker. Workers should not be diverted from scheduled jobs for this work. Includes work required to correct a condition which could become an emergency, work that could seriously affect morale, work that has command emphasis, or work required by an activity to accomplish its mission.

C._._ Routine (Priority 3): Work which does not meet the criteria for Priority 1 or 2. Work in this category generally shall be done in the most economical manner. These jobs cover required work which, if not accomplished, would extend an inconvenience or an unsightly condition.

C._._ Other (Priority 4): Work in this category is generally considered non-customer time sensitive. For example, off-season utility repair.

C._ Emergency_Work: In case of emergency work requirement, the Contracting Officer may verbally authorize or direct the Contractor to proceed. Written confirmation will follow at the earliest possible date. Verbal authorization shall be documented by the Contractor to include time, date, who, what, where, etc., and shall be retained in the files. The

Contracting Officer will establish any limitation (not to exceed, etc.) necessary at time of call.

C._ Work_Control: The Contractor shall schedule, control, and perform all work described herein IAW all terms and conditions contained in the contract. The Contractor shall develop and provide written plans and schedules to the Contracting Officer for approval. The schedules shall be kept current and submitted for Contracting Officer review by the 21st day of the month.

C._ Work_Clearance: For scheduled work involving disruption of post utility service, protection provided by fire and intrusion alarm systems or work involving digging operations the Contractor shall obtain a Work Clearance Request from the DPW (specify) days prior to work commencement.

C._ Utility_Location: The Contractor shall locate and stake out underground utility pipes/cables prior to digging operations. This requirement occurs approximately (specify) times annually and takes approximately (specify) hours to accomplish.

C._ Manufacturer's_Manuals: The Contractor shall obtain two (2) copies of the manufacturer's manuals on all new equipment installed by the Contractor. One (1) copy will be provided to the Government and the other retained by the Contractor. These manuals and operating instructions shall

become the property of the Government at the expiration or termination of the contract.

C._ Special_Provisions: The Contracting Officer reserves the right to add, change, or delete areas or buildings from the contract by change order, and the total contract price will be adjusted accordingly based on the contract unit prices.

SECTION D

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PACKAGING AND MARKING

NOTE_TO_WRITER: The writer should include any packaging, packing, preservation and marking requirements in this section. If there are none, then omit. These requirements are applicable only if the contract requires the Contractor to deliver supplies to the Government. This section would apply if the Contractor provides an operation of self help and troop support supply functions. (Ref: FAR Subpart 10.004 (e)).

SECTION E

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INSPECTION AND ACCEPTANCE

1. General Information: This section is prepared by the PWS writer and the Contracting Officer. The section contains a description of how the Government will monitor the Contractor's performance and the general acceptance standards expected from the Contractor. The actual inspection procedures developed are subject to unilateral revision by the Government at any time and are not a part of the contract.

NOTE_TO_WRITER: FAR Part 46 prescribes polices and procedures to assure that supplies and services procured by the Government conform to the quality and quantity set forth in the contract. The Government determines the type and extent of Government quality assurance based upon the particular acquisition. Contractors are responsible for carrying out their obligations as set forth in the contract terms and conditions, for controlling product quality, and for offering to the Government only those supplies and services conforming to contract requirements. A surveillance plan must be provided to potential Contractors as information only, and not as part of the contract. The key to assuring quality with minimal Government inspections is to ensure that a Contractor provides good

manageable quality control plan or program. Comparing results of random sampling of specified services against Contractor's quality control checklists will identify areas where a Contractor's quality control plan or program may need improvement.

2. Instructions:

a. Inspection_of_Services_-_Fixed_Price: The Contracting Officer should insert FAR Subpart clause 52.246-4, Inspection of Services - Fixed-price, for all solicitations when a fixed price contract is contemplated. (Ref. FAR Subpart 46.304).

b. Quality_Assurance_(QA)_and_Surveillance_Plans:

(1) When the Government purchases services, there must be some means provided to attest to the value received for moneys spent. To do this, the Government must be able to conform to contract requirements. The recipient of the contracted services is responsible for developing and implementing procedures that assure that the Government is getting the services that were contracted. These procedures are called quality assurance (QA). Contractors, on the other hand, are responsible for providing quality control (QC). QC controls the service-producing processes and ensures that the desired level of output quality is maintained. The PWS writer and Contacting Officer must ensure no contract

limits the Government's right to inspect.

(2) Quality assurance surveillance enables the Government to draw conclusions about a Contractor's performance and to document those conclusions about a Contractor's performance and to document those conclusions. The type of conclusions that can be drawn from surveillance depends on the evaluation method used. Conclusions can range from cursory to exact. The closer to exact the conclusions, the easier it is to convert them into corrective actions.

(3) The Government should monitor a Contractor's performance using QA procedures established for the contract. However, the Government may reserve the right to utilize other methods as necessary to assure Contractor compliance with all terms and conditions of the contract. The Contractor should be cautioned that additional costs to the Government to reinspect work caused by unsatisfactory work or nonperformance by the Contractor may be charged to the Contractor. (Ref. FAR Subpart 52.246-4). The Performance Requirements Summary (PRS), DA FORM 5473-F, is an important part of quality assurance and should be identified in SECTION E of the solicitation and listed in SECTION J as technical exhibit. (See para. 3 below). The PRS table is also included as part of the QA Surveillance Plan.

NOTE_TO_WRITER_: A Quality Assurance Surveillance Plan must not be incorporated as part of a contract. Accordingly, it is identified in SECTION J and attached as

information only with the solicitation, and a statement along the following lines must be inserted on the front cover:

"This plan is provided for information purposes only. This Quality Assurance Surveillance Plan is not part of the Request for Proposal (or Invitation for Bids) nor will it be made part of any resulting contract. The Government has the right to change or modify inspection methods at its discretion."

The release of surveillance methods to potential Contractors depends upon the functions being monitored and the installation personnel and practices. The issue should be resolved by functional and contracting people, perferably at the local level. The advantage of identifying the type of surveillance methods tends to promote good Government-Contractor relations, forces the Government to determine how the contract will be monitored, and gives the Contractor a better understanding of the performance expected of him. Moreover, the surveillance methods are not binding on the Government.

c. General_Acceptance_Standards: All Government facilities, to include all Government property assigned to or maintained by the Contractor should be clean, secure, and safe to operate. All Government equipment must be maintained to ensure that it

operates according to manufacturer's instructions. Equipment shall not be operated without protective shields or devices in place. All replacement items meet applicable federal, state, and local codes or regulations. Equipment should be operated in the most effective, efficient, and economical manner possible.

d. Inspection/Work_Verification: All work should be inspected by the Contracting Officer to ensure that the work is being accomplished according to the contract.

e. Reductions_for_Unsatisfactory_or_Nonperformance_Work: An amount equal to the value of the unsatisfactory or nonperformed work, as determined by the Contracting Officer should be deducted from any payment to the Contractor. (Ref. para 4-4,DA Pam 715-15). If the Contractor disagrees with the Contracting Officer's reduction, then the disagreement shall be subject to FAR Subpart 33.2, Disputes and Appeals.

NOTE_TO_WRITER: The following clauses are the Contracting Officer's responsibility. Recommend if desired. See FAR, DFARS, AFARS 52.246-1 through end to develop any recommended supplements to inspection clauses.

3. Inspection: All work will be inspected by the Contracting Officer as specified herein to insure that work is accomplished as approved by the Contracting Officer.

4. Reductions_for_Unsatisfactory_or_Nonperformed_Work: An amount equal to the value of the unsatisfactory or nonperformed

work, as determined by the Contracting Officer IAW para. 5. below, will be deducted from any payment due the Contractor. In the event the Contractor disagrees with the Contracting Officer as to any reduction, such disagreement shall be subject to the Contract clause entitled "Disputes" (section I). In general, deductions for items or services inspected using random sampling will be determined IAW the procedures outlined in this Section E. (See para. 7. and examples). Deductions for items or services inspected by other methods will be determined IAW the "Inspection of Services Fixed-Price" clause (section I). (See para. 6. and examples)

5. Payment_Analysis: Payment analysis is used to determine deductions or reductions of the Bid Schedule Item which corresponds to services found unsatisfactory regardless of whether the Government allows the service to be reperformed. Payment analysis is broken down into two separate categories: Deduction for Documented Defects and Deduction Projection.

6. Deduction_for_Documented_Defects: Each documented defect represents a loss in value to the Government and increases the administrative burden. The administrative burden may include: reinspection time, vehicle time, functional personnel (DPW, Budget, Procurement), performing additional records and reports. DOD's historical records have indicated that 8% to 10% of the contract dollar is used for contract administration. The cost

of reduced value can be calculated as a percentage or a true dollar amount. The percentages used for determining administration cost in the four concepts listed below are for illustration purposses only, (percentages may accually be higher or lower depending on the installation's geographical layout or the contract requirements).

(1) Work found unsatisfactory and reperformed by the Contractor:

10% of service value for administrative costs (See example 6.(1))

(2) Work found unsatisfactory and reperformed by the Government:

20% of service value for administrative costs plus cost of service (Government Cost to Reperform) (See example 6.(2))

(3) Work found unsatisfactory and reperformed by another Contractor:

20% of service value for administrative costs plus the contract price for the additional Contractor (See example 6.(3))

(4) Work found unsatisfactory and not reperformed by anyone, or work not performed at all:

10% of service value for administrative costs plus cost of service (from Bid Schedule) (See example 6.(4))

NOTE_TO_WRITER: The following examples (6. (1) thru 6. (4))have been developed based on para. 6. using the

percentages for administrative cost to determine deductions from Lump Sum Bid Schedules and Line Item Bid Schedules. IT IS VERY IMPORTANT THAT DEDUCTION METHODS ARE ILLUSTRATED IN SECTION E SO THEY WILL BECOME PART OF THE CONTRACT ONCE THE CONTRACT HAS BEEN AWARDED.

**EXAMPLE 6.(1)**

(1) Work found unsatisfactory and reperformed by the contractor:

--10% of service value for administrative costs

Analysis for Lump Sum

Requirement = Vacant Quarters Maintenance (VQM) Surveillance = 100% Inspection

Bid Cost = $10,000.00 / Month (Lump Sum)

Population = 50 Quarters (Units)

Defects = 10 Quarters (Units)

1. Cost of Service = $10,00.00 / 50 Units = $200.00 Per Average Unit

2. Service Value = Number of Defects X Cost of Service
= 10 X $200.00 = $2,000.00

3. Deduction = Administrative Deduction % X Service Value
= 10% X $2,000.00
= $200.00

Analysis for Line Item Cost

Requirement = (VQM)

Surveillance = 100% Inspection

Line Item Cost = $200.00 / Unit Population = 50 Quarters

(Units) Defects = 10 Quarters (Units)

1. Cost of Service = $200.00 per Unit

2. Service Value = Number of Defects X Cost of Service

= 10 X $200.00 = $2,000.00

3. Deduction = Administrative Deduction % X Service Value

= 10% X $2,000.00

= $200.00

or

1 Step Analysis for Line Item Cost

Administrative Deduction % X Defects X Cost of Service

= 10% (10 X $200.00)

= 10% X $2,000.00

Deduction = $200.00

**EXAMPLE 6.(2)**

(2) Work found unsatisfactory and reperformed by the government:

20% of service value for administrative costs plus cost of service (Government Cost to Reperform)

Analysis for Lump Sum

Requirement = Vacant Quarters Maintenance (VQM)

Surveillance = 100% Inspection

Bid Cost = $10,000.00 / Month (Lump Sum)

Population = 50 Quarters (Units)

Defects = 10 Quarters (Units)

1. Cost of Service = $10,000.00 / 50 Units = $200.00 Per Average Unit

2. Service Value = Number of Defects X Cost of Service

= 10 X $200.00 = $2,000.00

3. Admin Cost = Administrative Deduction % X Service Value

= 20% X $2,000.00 = $400.00

4. Deduction = Administrative Cost + Govt. Cost to Reperform

= $400.00 + $3,500.00

= $3,900.00

Analysis for Line Item Cost

Requirement = (VQM)

Surveillance = 100% Inspection

Line Item Cost = $200.00 / Unit Population = 50 Quarters (Units) Defects = 10 Quarters (Units)

1. Cost of Service = $200.00 per Unit

2. Service Value = Number of Defects X Cost of Service

= 10 X $200.00 = $2,000.00

3. Admin Cost = Administrative Deduction % X Service Value

= 20% X $2,000.00 = $400.00

4. Deduction = Administrative Cost + Govt. Cost to Reperform

= $400.00 + $3,500.00

= $3,900.00

or

1 Step Analysis for Line Item Cost

Administration Deduction % X Service Value + Govt. Cost to Reperform

= (20% X $2,000.00) + $3,500.00

= $400.00 + $3,500.00

Deduct = $3,900.00

**EXAMPLE 6.(3)**

(3) Work found unsatisfactory and reperformed by another contractor:

20% of service value for administrative costs plus the contract price for the additional contractor

Analysis for Lump Sum

Requirement = Vacant Quarters Maintenance (VQM)

Surveillance = 100% Inspection

Bid Cost = $10,000.00 / Month (Lump Sum)

Population = 50 Quarters (Units)

Defects = 10 Quarters (Units)

1. Cost of Service = $10,000.00 / 50 Units = $200.00 Average Unit

2. Service Value = Number of Defects X Cost of Service

= 10 X $200.00 = $2,000.00

3. Admin Cost = Administrative Deduction % + Additional Contractor

= 20% X $2,000.00 = $400.00

4. Deduction = Administrative Cost + Additional Contractor Contract Price

= $400.00 + 3,000.00

= $3,400.00

Analysis for Line Item Cost

Requirement = (VQM)

Surveillance = 100% Inspection

Line Item Cost = $200.00 / Unit Population = 50 Quarters (Units) Defects = 10 Quarters (Units)

1. Cost of Service = $200.00 per Unit

2. Service Value = Number of Defects X Cost of Service

= 10 X $200.00 = $2,000.00

3. Admin Cost = Administrative Deduction % X Services Value

= 20% X $2,000.00 = $400.00

4. Deduction = Administrative Cost + Additional Contractor Contract Price

= $400.00 + $3,000.00

= $3,400.00

or

1 Step Analysis for Line Item Cost

Administrative Deduction % X Defects X Cost of Service + Additional Contractor Contract Price

= 20% X 10 X $200.00 + $3,000.00

= $400.00 + $3,000.00

Deduct = $3,400.00

**EXAMPLE 6.(4)**

(4) Work found unsatisfactory and not reperformed by anyone, or work not performed at all:

10% of service value for administrative costs plus cost of service (from Bid Schedule)

Analysis for Lump Sum

Requirement = Vacant Quarters Maintenance (VQM)

Surveillance = 100% Inspection

Bid Cost = $10,000.00 / Month (Lump Sum)

Population = 50 Quarters (Units)

Defects = 10 Quarters (Units)

1. Cost of Service = $10,000.00 / 50 Units = $200.00 Average Unit

2. Service Value = Number of Defects X Cost of Service

= 10 X $200.00 = $2,000.00

3. Admin Cost = Administrative Deduction % X Service Value

= 10% X $2,000.00 = $200.00

4. Deduction = Administrative Cost + Service Value

= $200.00 + $2,000.00

= $2,200.00

Analysis for Line Item Cost

Requirement = (VQM)

Surveillance = 100% Inspection Line Item Cost = $200.00 / Unit

Population = 50 Quarters (Units)

Defects = 10 Quarters (Units)

1. Cost of Service = $200.00 per Unit

2. Service Value = Number of Defects X Cost of Service

= 10 X $200.00 = $2,000.00

3. Admin Cost = Administrative Deduction % X Service Value

= 10% X $2,000.00 = $200.00

4. Deduction = Administrative Cost + Service Value

= $200.00 + $2,000.00

= $2,200.00

or

1 Step Analysis for Line Item Cost

Administrative Deduction % X Service Value + Defects X Cost of Service = (10% X $2,000.00) + (10 X $200.00)

= $200.00 + $2,000.00

Deduct = $2,200.00

7. Deduction_Projection: Deduction projection may be used only with the random sample surveillance method and only within the parameters specified herein. In deducting for fixed-price contracts by projection using random sampling, the statistical validity of the projection must be such that it does not place an unfair burden on the Contractor. The number of samples taken within any given population determines the validity of the

projection when used to predict the actual number of defects which would be found if each and every work unit had been inspected. To ensure valid projections, the number of observations for each population size must be sufficient. The required number of observations for each population size has been calculated and included as Tables 1-A, 1-B, and 1-C. The following guidelines should be followed:

(1) Deduction projection should be used only if Contractor's performance is less than satisfactory. If overall performance is satisfactory, deduct for observed defects only as described in para. 6.

(2) Deduction projection may be used only on that portion of the population that has not been sampled. Those defects observed in the random sample must be treated as per paragraph E.3.4. Deduction projection is used as follows:

(a) Determine the percentage of the population that has been randomly sampled.

(b) Determine the deduction by multiplying the unsampled percentage by the total cost of the services, and then multiply this product by the Observed Defect Rate (ODR).

NOTE_TO_WRITER: The following examples have been developed based on paragraph 6. (Deduction for Documented Defects) and the parameters (principals) of random sampling, and using the predetermined percentages as in paragraph 6.(1

thru 4) for Lump Sum Bid Schedules and Line Item Bid Schedules.

**EXAMPLE 7.(1)**

(1) Work found unsatisfactory and reperformed by the contractor:

--10% of service value for administrative costs

Analysis for Lump Sum

Requirement = Family Housing Preventive Maintenance (PM)

Surveillance = Random Sampling

Bid Cost = $4,000.00 AQL = 6.5%

Population = 50 Units

Sample Size = 8 Units (Table 1-A)

Defects = 3 (reject level 2) (Unsatisfactory Performance)

1. Percentage Defective = Defects / Sample Size
   = 3 / 8
   = 38%
2. Unsampled Population = Population - Sample Size
   = 50 - 8
   = 42
3. Percentage Unsampled = Unsampled Population / Population
   = 42 / 50
   = 84%
4. Deduction (Unsampled) = % Unsampled X % Defective X Service

Value = 84% X 38% X

$4,000.00

= $1,276.80

5. Administration Cost = 10% X Service Value / Population X Defects

= 10% ($4,000.00 / 50) 3

= 10% X $80.00 X 3

= $24.00

6. Total Deduction = Deduction Unsampled + Administration Cost

= $1,276.80 + $24.00

= $1,300.80

**EXAMPLE 7.(1)a**

Analysis for Line Item Cost

Requirement = Family Housing (PM)

Surveillance = Random Sampling

Line Item Cost = $80.00

AQL = 6.5%

Population = 50 Units

Sample Size = 8 Units (Table 1-A)

Defects = 3 (rejects level 2) (Unsatisfactory Performance)

1. Percentage Defective = Defects / Sample Size

= 3 / 8

= 38%

2. Unsampled Population = Population - Sample Size

= 50 - 8

= 42

3. Service Value = Line Item Cost

= $80.00

4. Deduction Unsampled = Unsampled Pop. X % Defective X Service Value

= 42 X 38% X $80.00

= $1,276.80

5. Administration Cost = 10% X Service Value X Defects

= 10% X $80.00 X 3

= $24.00

6. Total Deduction = Deduction Unsampled + Administration Cost

= $1,276.80 + $24.00

= $1,300.80

**EXAMPLE 7.(2)**

(2) Work found unsatisfactory and reperformed by the government:

20% of service value for administrative costs plus cost of service (Government Cost to Reperform)

Analysis for Lump Sum

Requirement = Family Housing Preventive Maintenance (PM)

Surveillance = Random Sampling

Bid Cost = $4,000.00

AQL = 6.5%

Population = 50 Units

Sample Size = 8 Units (Table 1-A)

Defects = 3 (reject Level 2) (Unsatisfactory Performance)

1. Percentage Defective = Defects / Sample Size
   = 3 / 8
   = 38%
2. Unsampled Population = Population - Sample Size
   = 50 - 8
   = 42
3. Percentage Unsampled = Unsampled Population / Population
   = 42 / 50
   = 84%
4. Deduction (Unsampled) = % Unsampled X % Defective X Service Value = 84% X 38% X $4,000.00
   = $1,276.80
5. Administration Cost = 20% X Service Value / Population X Defects
   = 20% ($4,000.00 / 50) 3
   = 20% X $80.00 X 3

= $48.00

6. Govt. Reperforms = Service Value / Population X Defects

= ($4,00.00 / 50) X 3

= $80.00 X 3

= $240.00

7. Total Deduction = Deduct Unsampled + Admin Cost + Govt. Reperforms

= $1,276.80 + $48.00 + $240.00

= $1,564.80

**EXAMPLE 7.(2)a**

Analysis for Line Item Cost

Requirement = Family Housing (PM)

Surveillance = Random Sampling

Line Item Cost = $80.00

AQL = 6.5%

Population = 50 Units

Sample Size = 8 Units

Defects = 3 (reject level 2) (Unsatisfactory Performance)

1. Percentage Defective = Defects / Sample Size

= 3 / 8

= 38%

2. Unsampled Population = Population - Sample Size

= 50 - 8

= 42

3. Service Value = Line Item Cost

= $80.00

4. Deduction Unsampled = Unsampled Population X % Defective X Service Value

= 42 X 38% X $80.00

= $1,276.80

5. Administration Cost = 20% X Service Value X Defects

= 20% X $80.00 X 3

= $48.00

6. Govt. Reperforms = Service Value X Defects

= $80.00 X 3

= $240.00

7. Total Deductions = Deduct Unsampled + Admin Cost + Govt. Reperforms

= $1,276.80 + $48.00 + $240.00

= $1,564.80

**EXAMPLE 7.(3)**

(3) Work found unsatisfactory and reperformed by another contractor:

20% of service value for administrative costs plus the contract price for the additional contractor

Analysis for Lump Sum

Requirement = Family Housing Preventive Maintenance (PM)

Surveillance = Random Sampling

Bid Cost = $4,000.00

AQL = 6.5%

Population = 50 Units

Sample Size = 8 Units (Table 1-A)

Defects = 3 (reject level 2) (Unsatisfactory Performance)

1. Percentage Defective = Defects / Sample Size
   = 3 / 8
   = 38%
2. Unsampled Population = Population - Sample Size
   = 50 - 8
   = 42
3. Percentage Unsampled = Unsampled Population / Population
   = 42 / 50
   = 84%
4. Deduction (Unsampled) = % Unsampled X % Defective X Service Value = 84% X 38% X $4,000.00
   = $1,276.80
5. Administration Cost = 20% X Service Value / Population X Defects = 20% ($4,000.00 / 50) 3
   = 20% X $80.00 X 3
   = $48.00
6. Another Contractor = New Contract Price / Population X

Defects

Reperforms = ($4,500.00 / 50) X 3

= $90.00 X 3

= $270.00

7. Total Deductions = Deduct Unsampled + Admin Cost + New Contractor

= $1,276.8 + 48.00 + $270.00

= $1,594.80



**EXAMPLE 7.(3)a**

Analysis for Line Item Cost

Requirement = Family Housing (PM)

Surveillance = Random Sampling

Line Item Cost = $80.00 AQL = 6.5%

Population = 50 Units

Sample Size = 8 Units (Table 1-A)

Defects = 3 (reject level 2) (Unsatisfactory Performance)

1. Percentage Defective = Defects / Sample Size

= 3 / 8

= 38%

2. Unsampled Population = Population - Sample Size

= 50 - 8

= 42

3. Service Value = Line Item Cost

= $80.00

4. Deduction Unsampled = Unsampled Population X % Defective X Service Value

= 42 X 38% X $80.00

= $1,276.80

5. Administrative Cost = 20% X Service Value X Defects

= 20% X $80.00 X 3

= $48.00

6. Another Contractor Defects Reperforms = New Contract Price / Population X

= ($4,500.00 / 50) X 3

= $90.00 X 3

= $270.00

7. Total Deductions = Deduct Unsampled + Admin Cost + New Contract

= $1,276.80 + $48.00 + $270.00

= $1,594.80

**EXAMPLE 7.(4)**

(4) Work found unsatisfactory and not reperformed by anyone, or work not performed at all:

10% of service value for administrative cost plus cost of service (from Bid Schedule)

Analysis for Lump Sum

Requirement = Family Housing Preventive Maintenance (PM)

Surveillance = Random Sampling

Bid Cost = $4,000.00

AQL = 6.5%

Population = 50 Units

Sample Size = 8 Units (Table 1-A)

Defects = 3 (reject level 2) (Unsatisfactory Performance)

1. Percentage Defective = Defects / Sample Size

= 3 / 8

22

= 38%

2. Unsampled Population = Population - Sample Size

= 50 - 8

= 42

3. Percentage Unsampled = Unsampled Population / Population

= 42 / 50

= 84%

4. Deduction (Unsampled) = % Unsampled X % Defective X Service Value = 84% X 38% X $4,000.00

= $1,276.80

5. Administration Cost = 10% X Service Value / Population X Defects

= 10% ($4,000.00 / 50) 3

= 10% X $80.00 X 3

= $24.00

6. Work not Reperformed = Service Value / Population X Defects or not Performed = ($4,000.00 / 50) X 3

= $80.00 X 3

= $240.00

7. Total Deductions = Deduct Unsampled + Admin Cost + Unperformed work

= $1,276.80 + $24.00 + 240.00

= $1,540.80



EXAMPLE 7.(4)a

Analysis for Line Item Cost

Requirement = Family Housing (PM)

Surveillance = Random Sampling

Line Item Cost = $80.00

AQL = 6.5%

Population = 50 Units

Sample Size = 8 Units (Table 1-A)

Defects = 3 (reject level 2) (Unsatisfactory Performance)

1. Percentage Defective = Defects / Sample Size

= 3 / 8

= 38%

2. Unsampled Population = Population - Sample Size

= 50 - 8

= 42

3. Service Value = Line Item Cost

= $80.00

4. Deduction Unsampled = Unsampled Population X % Defective X Service Value

= 42 X 38% X $80.00

= $1,276.80

5. Administrative Cost = 10% X Service Value X Defects

= 10% X $80.00 X 3

= $24.00

6. Work not Reperformed = Service Value X Defects

= $80.00 X 3

= $240.00

7. Total Deductions = Deduct Unsampled + Admin Cost + Unperformed Work

= $1,276.80 + $24.00 + $240.00

= $1,540.00

8. Performance_Requirements_Summary_Table_Example: This paragraph describes the content of a Performance Requirements Summary Table.

This table must be identified in SECTION E of the solicitation and listed as a technical exhibit in SECTION J. It is also

included as part of the Quality Assurance Surveillance Plan. A Performance Requirements Summary Table should be completed as follows (see pages _____ through _____):

a. Service_Requirement_(Column_1): This column should contain a brief summary of each service requirement either identified as line or subline cost items or other services within the line or subline cost items. All service requirements to be monitored must be included. When deciding how to express the requirements, consideration should be given to surveillance methods to be used.

b. Contract_Paragraph_Number_(Column_2): This column should list the paragraph number in the PWS which specifies the service requirement.

c. Standard_(Column_3): This column must describe the standard to be met. It should be written in objective, measurable terms. References to standards contained in referenced documents also may be used.

d. Maximum_Allowable_Degree_of_Deviation_from_Requirement (AQL)_(Column_4): This column should show the minimum acceptable quality level (AQL). Technically, it is a modification of the standard. It should be stated as either a defect rate (percentage) or an absolute number per time period (month). If payment analysis is to be used, the size of the population service (or individual jobs) is to be performed

during a specified time period (normally 1 month).

e. Method_of_Surveillance_(Column)_5): This column should show the method of surveillance anticipated for the service requirement. The following methods are available and more than one may be used for each service requirement: Random Sampling, Planned Sampling, 100-Percent Inspection, Validated Complaints, and Unscheduled Inspection. The Government is not restricted to using the methods chosen and shown in column 5.

PERFORMANCE REQUIREMENTS SUMMARY

| REQUIRED SERVICE | PARAGRAPH NUMBER | STANDARD | MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM REQMT. (AQL) | METHOD OF SURVEILLANCE | PROPORTION OF REQUIRED SERVICE TO TOTAL CONTRACT PRICE |
|---|---|---|---|---|---|
| 0010AA Inspect maintain and operate air-conditioning systems. | C.1 | Meet quality standards IAW Section C. | 10% Lot is number of days per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AB Inspect maintain and operate re-frigeration plants and systems. | C.1 | Meet quality standards IAW section C. | 10% Lot is number of days per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AC Inspect maintain and repair instru-ment & control systems. | C.1 | Meet quality standards IAW section C. | 10% Lot is number of days per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AD Water treat closed loop systems. | C.5.1.1 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| 0010AE Water treat cooling towers greater than 150 ton capacity. | C.5.1.2 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

Reference, DA Pamphlet 715-15 Form 5473-R

PERFORMANCE REQUIREMENTS SUMMARY

| REQUIRED SERVICE | PARAGRAPH NUMBER | STANDARD | MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM REQMT. (AQL) | METHOD OF SURVEILLANCE | PROPORTION OF REQUIRED SERVICE TO TOTAL CONTRACT PRICE |
|---|---|---|---|---|---|
| 0010AF Water treat cooling towers 50 to 150 ton capacity. | C.5.1.3 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AG Water treat cooling towers less than 50 ton capacity. | C.5.1.4 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AH Inspect maintain, repair and replace the following requirements. | C.5.2 | Accomplish per procedure IAW schedule and Section C. | | | |
| a. Instrument and control systems. | C.5.2.1 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| b. Cold storage facilities. | C.5.2.2 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| c. Refrigeration equipment. | C.5.2.3 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

Reference, DA Pamphlet 715-15 Form 5473-R

PERFORMANCE REQUIREMENTS SUMMARY

| REQUIRED SERVICE | PARAGRAPH NUMBER | STANDARD | MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM REQMT. (AQL) | METHOD OF SURVEILLANCE | PROPORTION OF REQUIRED SERVICE TO TOTAL CONTRACT PRICE |
|---|---|---|---|---|---|
| d. Liquid chillers and compressors. | C.5.2.3 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| e. Evaporative coils, chilled water coils, and coolers. | C.5.2.4 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| f. Air-cooled condensers. | C.5.2.5 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| g. Evaporative condensers. | C.5.2.6 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| h. Evaporative air coolers. | C.5.2.8 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| i. Ventilating | C.5.2.9 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

Reference, DA Pamphlet 715-15 Form 5473-R

PERFORMANCE REQUIREMENTS SUMMARY

| REQUIRED SERVICE | PARAGRAPH NUMBER | STANDARD | MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM REQMT. (AQL) | METHOD OF SURVEILLANCE | PROPORTION OF REQUIRED SERVICE TO TOTAL CONTRACT PRICE |
|---|---|---|---|---|---|
| 0010AI Inspect maintain, repair and replace air compressors and air drying equipment. | C.5.5 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AJ Inspect maintain, repair and replace water coolers and ice machine equipment. | C.5.6 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AK Inspect maintain, repair and replace food service refrigeration equipment. | C.5.7 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| 0010AL Inspect maintain, repair and replace domestic refrigeration equipment. | C.5.8 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

Reference, DA Pamphlet 715-15 Form 5473-R

PERFORMANCE REQUIREMENTS SUMMARY

| REQUIRED SERVICE | PARAGRAPH NUMBER | STANDARD | MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM REQMT. (AQL) | METHOD OF SURVEILLANCE | PROPORTION OF REQUIRED SERVICE TO TOTAL CONTRACT PRICE |
|---|---|---|---|---|---|
| 0010AM Inspect maintain, repair and replace vacuum equipment. | C.5.9 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AN Inspect maintain, repair and replace air moving equipment. | C.5.10 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AO Inspect maintain, repair and replace toxic exhaust and ventilation systems. | C.5.11 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of days per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AP Inspect maintain, repair and replace computer system. | C.5.12 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of days per month. All defects cured within _____. | Random Sampling | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| 0010AQ Inspect maintain, repair and replace electric & pneumatic control equip. | C.5.13 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of request per month. All defects cured within _____. | Random Sampling | $_____ |

Reference, DA Pamphlet 715-15 Form 5473-R

PERFORMANCE REQUIREMENTS SUMMARY

| REQUIRED SERVICE | PARAGRAPH NUMBER | STANDARD | MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM REQMT. (AQL) | METHOD OF SURVEILLANCE | PROPORTION OF REQUIRED SERVICE TO TOTAL CONTRACT PRICE |
|---|---|---|---|---|---|
| 0010AR Inspect maintain, repair and replace A/C equipment 5 ton and less. | C.5.14 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AS Inspect maintain, repair and replace A/C equipment 6 to 25 ton. | C.5.15 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AT Inspect maintain, repair and replace A/C equipment 26 to 100 ton. | C.5.16 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| 0010AU Inspect maintain, repair and replace climate control chambers. | C.5.19 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AV Inspect maintain, repair and replace CO2-type refrigeration equipment. | C.5.20 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

Reference, DA Pamphlet 715-15 Form 5473-R

PERFORMANCE REQUIREMENTS SUMMARY

| REQUIRED SERVICE | PARAGRAPH NUMBER | STANDARD | MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM REQMT. (AQL) | METHOD OF SURVEILLANCE | PROPORTION OF REQUIRED SERVICE TO TOTAL CONTRACT PRICE |
|---|---|---|---|---|---|
| 0010AW Inspect maintain, repair and replace Cascade-type refrigeration equipment. | C.5.21 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AX Inspect maintain, repair and replace constant temperature & humidity control equipment | C.5.22 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010AY Inspect maintain, repair and replace heat and humidity controlled oven equipment. | C.5.23 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| 0010AZ Inspect maintain, repair and replace cooling tower equipment. | C.5.24 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

Reference, DA Pamphlet 715-15 Form 5473-R

PERFORMANCE REQUIREMENTS SUMMARY

| REQUIRED SERVICE | PARAGRAPH NUMBER | STANDARD | MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM REQMT. (AQL) | METHOD OF SURVEILLANCE | PROPORTION OF REQUIRED SERVICE TO TOTAL CONTRACT PRICE |
|---|---|---|---|---|---|
| 0010BA Inspect maintain, repair and replace energy monitoring control system (EMCS). | C.5.25 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of days per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010BB Perform A/C shutdowns. | C.5.27 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010BC Perform A/C startups. | C.5.27 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010BD Perform preventive maintenance on cooling towers | C.5.28 C.5.28.1 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010BE Perform preventive maintenance | C.5.28 C.5.28.2 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured | Random Sampling | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| on refrigeration equipment. | | | within _____. | | |

Reference, DA Pamphlet 715-15 Form 5473-R

PERFORMANCE REQUIREMENTS SUMMARY

| REQUIRED SERVICE | PARAGRAPH NUMBER | STANDARD | MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM REQMT. (AQL) | METHOD OF SURVEILLANCE | PROPORTION OF REQUIRED SERVICE TO TOTAL CONTRACT PRICE |
|---|---|---|---|---|---|
| 0010BF Perform preventive maintenance on ice machines. | C.5.28<br>C.5.28.3 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of days per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010BG Perform preventive on freezer chests and walk-ins. | C.5.28<br>C.5.28.5 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010BH Perform preventive maintenance on air cleaning devices. | C.5.28<br>C.5.28.7 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010BI Perform preventive maintenance on evaporative cooling for drip-type and rotary drum coolers. | C.5.28<br>C.5.28.8 | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

| | | | | | |
|---|---|---|---|---|---|
| 0010BJ Perform emergency response and repair. | C._._ | Accomplish per procedure IAW schedule and Section C. | 4% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

Reference, DA Pamphlet 715-15 Form 5473-R

PERFORMANCE REQUIREMENTS SUMMARY

| REQUIRED SERVICE | PARAGRAPH NUMBER | STANDARD | MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM REQMT. (AQL) | METHOD OF SURVEILLANCE | PROPORTION OF REQUIRED SERVICE TO TOTAL CONTRACT PRICE |
|---|---|---|---|---|---|
| 0010BK Perform urgent response and repair. | C._._ | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of days per month. All defects cured within _____. | Random Sampling | $_____ |
| 0010BL Perform routine response and repair. | C._._ | Accomplish per procedure IAW schedule and Section C. | 10% Lot is number of requests per month. All defects cured within _____. | Random Sampling | $_____ |

Reference, DA Pamphlet 715-15 Form 5473-R

SECTION F

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CONTRACT DELIVERY OR PERFORMANCE

1. General_Information: This section is prepared by the PWS writer and the Contracting Officer in accordance with FAR Part 12. The requirements for time, place, and method of delivery or performance must be developed by the PWS writer.

2. Instructions:

a. The time of delivery or performance is an essential contract element and should be clearly stated in solicitations. Contracting Officers should ensure that delivery or performance schedules are realistic and meet the requirements of the acquisition. Schedules that are unreasonably tight or difficult to attain tend to restrict competition; are inconsistent with small business policies; and may result in higher contract prices.

b. Deliverables/reports should be identified in this section. They can be listed in the form of a schedule which lists the title, format, contract reference paragraph, frequency and number of copies required. (see para. 3e below).

3. Examples:

a. Term_of_Contract: The contract shall be in full effect for a period of (specify) year, starting (specify) or date of award, whichever is later, and ending (specify), plus any

extension of contract term exercised IAW option clauses contained in SECTION H and/or SECTION I.

b. Quality_Control_Plan: The Contractor shall deliver one revised copy of the quality control plan to the Contracting Officer NLT (specify) days after award and before contract start date. Comments made by the Contracting Officer will be included in the next revision of the applicable document or acceptable justification shall be provided for rejected comments.

c. Cooling_Towers_and_Evaporative_Condensers: The Contractor shall prepare and submit a Cooling Towers and Evaporative Condensers Maintenance Plan to the Contracting Officer within (specify) calendar days prior to start of the contract. The plan shall provide a program to accomplish all maintenance as specified. The Cooling Towers and Evaporative Condensers Maintenance Plan shall be updated by the (specify) _____ day of each month thereafter, to indicate actual accomplishment. The plan will also include a schedule indicating projected and actual dates and locations of where services are performed. Whenever a deviation from an approved A/C and refrigeration maintenance schedule is necessary, an updated schedule shall be submitted to the Contracting Officer for approval.

d. Daily_Reports: The Contractor shall furnish a daily report in duplicate of work performed and the area in which the

work was done. The daily report shall be delivered to the Contracting Officer by (specify) _____ hours each Monday. Negative reports shall be submitted when special situations such as locked gates, excessive rainfall, or military usage prevent work completion.

e. Deliverables_Schedule: (Add appropriate paragraph reference from solicitation)

| **PARAGRAPH TITLE** | **FORMAT** | **DATE** | **FREQUENCY** | **DISTRIBUTION** |
|---|---|---|---|---|
| Designation of Project Manager | Written Statement | NLT contract start date | Initially and upon change | Contracting officer |
| Quality Control Plan | Written Statement | NLT 5 days before contract start date | Initially and upon change | Contracting officer |
| Quality Control Report | Written Statement | Within 24 hours of occurrence | Daily | Contracting officer |
| Manhour Report | Written Statement | NLT 5th workday of each month | Monthly | Contracting officer |
| Transformer Sequence | Written Statement | NLT 5 days before contract start date | Initially and upon change | Contracting officer |

SECTION G

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CONTRACT ADMINISTRATION DATA

1. General_Information: The Contracting Officer is responsible for including accounting and appropriation data and any required contract administration information or instructions other than those on the solicitation form (Standard Form 33). The PWS writer may include any special invoicing instructions.

2. Instructions: Include any special invoicing instructions applicable to the installation. Where multiple paying offices are used, inform the Contracting Officer of the correct paying office(s) who will make payment, or other appropriate payment data. Discounts offered in service contracts are often lost due to failure to provide the paying office approved invoices in the discount time frame. The above provision will allow the paying office the means to monitor payments due and aid all offices to insure such discounts can be taken when appropriate. PWS writers should also be aware that Public Law 97-177 (S.1131) requires procurement contracts to contain specific payment deadlines and that bills be paid on time or pay a penalty (interest charge) computed as described in the Contract Disputes Act of 1978. Public Law 97-177 provides that, unless a different period is negotiated by the parties, payment will be due 30 days after receipt of the invoices. NOTE_TO_WRITER: The

Contracting Officer must be instructed not to approve invoices unless work has been accomplished satisfactorily. Failure to verify work prior to approving payment could result in the Contractor being paid for work either not done or done unsatisfactorily, with a further result that the Contracting Officer who approves payment could be held liable. It is important that the Contracting Officer carefully document a Contractor's performance. AGSCA Decision No. 22784 (August 13, 1981) found that where there is no evidence (lack of documentation) of quality assurance surveillance, the Government must give partial credit for satisfactory work with no deductions allowed; i.e., evaluators who keep track of daily progress must give credit for work satisfactorily performed, even if only partial.

3. Example: The following provision is highly recommended for all service contracts: A Contractor shall submit an original and two copies of all invoices directly to the paying office shown in block 27, Standard Form 33 (SF 33). One additional copy shall be submitted to the Contracting Office shown in block 7, SF 33 and (specify) copy(s) shall be submitted to the Contracting Officer. All invoices shall reflect the contract number, any applicable work order number, and any applicable delivery order number. The original vendor copy for any reimbursable parts or material invoices shall be attached to the

copy provided to the Contracting Officer. Each invoice shall be certified by the Contractor as being true, complete, and accurate. Additionally, each invoice containing reimbursable parts or material items shall have attached, or reflect disposition of, all parts or materials, and any credits to the Government for excess parts or materials not used on the specific job or project as approved by the Contracting Officer. CAUTION: Failure by Contractor to submit invoices as specified by DFAR Subpart 52.232-7000 may delay any payment due and shall be at the Contractor's own risk. Also, failure to provide each office with copies suitable for copying with a (specify type) copy machine may cause delay. Any delay, due to submission of incorrect invoices by the Contractor, shall be cause to adjust any period related to any discounts offered. The original copy, submitted to the paying office, shall govern computation of any discount period.

SECTION H

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SPECIAL CONTRACT REQUIREMENTS

1. General_Information: SECTION H is the responsibility of the Contracting Officer and wording is not within the purview of the PWS writer. However, the PWS writer should consult with the Contracting Officer to determine if any special instructions are deemed necessary.

2. Instructions:

a. Include a clear statement of any special contract requirements that are not included in SECTION I, "Contract Clauses," or in other sections of the Uniform Contract Format. The writer should recommend inclusion of any special contract requirement from the General Tasks and Standards identified in SECTION C, if applicable.

b. Application of the Davis Bacon Act prescribed in memorandums dated 19 September 1985, issued by acquisition and logistics of the Secretary of Defense and 1 October 1985 from SAIL-D/P&CA, Office of Assistant Secretary of the Army should be followed.

3. Examples:

a. Option_to_Extend_Contract_Term: (Ref: FAR Subparts 52.217-1 through 52.217.9 and DFAR Subpart 52.217-7000).

NOTE_TO_WRITER: (Ref: Paragraph 4-11 a, AR 5-20)

Contract options must be included for a total of 5 years (e.g., not less than 6 months for fiscal year awarded plus 4 option years).

b. Contractor_Responsibility,_Work_Levels_I,_II,_and_III: All work should be firm and fixed-priced if adequate work history is available and description/specifications/work statements setting forth all work requirements can be written. Work Level III, defined as indefinite delivery, should not be used in such case.

(1) Level_I: The Contractor shall perform all Level I work at the lump sum fixed-price (excluding parts and materials which will be reimbursed at actual cost).

(2) Level_II: The Contractor shall perform all Level II work at the lump sum fixed-price established in the bid schedule. (Level II repair orders exceeding labor manhours or material costs must be approved by the Contracting Officer in advance.) Contractor initiated Level II work shall be submitted to the work control desk for review, prior to any work being performed if time permits, to verify that the repair will not conflict with other ongoing projects, planning, or exceed expenditure limits established by higher authority.

(3) Level_III: The Contractor shall perform Level III work only after there is an approval in writing by the Contracting Officer, except as specified for emergency work. If applicable,

labor hours will be negotiated based on job standards at the unit prices established in the bid schedule. Preliminary estimates shall be provided if requested. The Government reserves the right to have this work done by others. The Government will reimburse the Contractor for the actual approved material cost. The approved material cost shall not be exceeded without the approval of the Contracting Officer.

SECTION I

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CONTRACT CLAUSES

NOTE_TO_WRITER:

a. The Contracting Officer is responsible for preparing SECTION I which includes the clauses required by law or by the FAR and any additional clauses in this section expected to apply to any resulting contract. These clauses are not required to be included in any other section of the uniform contract format.

b. The Corps of Engineers (COE) Contracting Officers use "package sets of contract clauses" (boilerplates) in their contracts. MACOM Contract Offices may or may not use this method. The PWS writer should determine those contract clauses which are normally included by the Contracting Officer and make recommendations for any additional Uniform Contract Clause contained in the FAR or DOD, Army, and MACOM FAR supplements.

SECTION J

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LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

1. General_Information: This section is prepared by the Con tracting Officer after receiving copies of all technical exhibits and other documents from the PWS writer. This list should include title, date, and number of pages for each document, technical exhibit, and other attachments that make up the solicitation package.

2. Instructions: The PWS writer should consolidate technical exhibits or attachments wherever possible in order to preclude overlapping requirements. Tables and maps showing areas should be self-explanatory, if possible, and referenced to specific paragraphs in the solicitation package. The items listed in SECTION J should be attached to the solicitation package following SECTION M.

3. Examples: The following is a representative listing of documents. Sample Technical Exhibits are included in SECTION J of this guide for instructional purposes only. They are identified by an asterisk in front of the Technical Exhibit number listed below.

    a. Technical_Exhibits

| NUMBER | REF. PARA. | TITLE | DATE | PAGES |
|---|---|---|---|---|
| * 1 | | Annual Workload Analysis | May 93 | 1 |
| * 2 | | Preventive Maintenance Frequency and Tasks | May 93 | 3 |
| * 3 | | Preventive Maintenance Inventory | May 93 | 2 |
| * 4 | | Monitoring of Refrigeration, Ventilation, and Air-Conditioning Equipment and System | May 93 | 2 |
| * 5 | | Air-Conditioning Shutdown Energy Savings Reports/Submissions | May 93 | 1 |
| * 6 | | Government-Furnished Property | May 93 | 1 |
| 7 | | Contract for Sale of Utility Services | May 93 | 1 |
| 8 | | Military Police - Motor Traffic Codes | May 93 | 10 |
| 9 | | Facility Engineer Work Clearance Form | May 93 | 1 |

b. References (Only list references that are included in the solicitation package.)

c. Documents (Only list documents that are included in the solicitation package.)

d. Attachments (Only list attachments that are included in the solicitation package.)

LIST_OF_MAPS/DRAWINGS

NOTE_TO_WRITER: Include site plan drawing(s) that show all activity buildings, housing area(s), recreation facilities, and other areas where the Contractor is to provide service. Maps and drawings are property of the Government and shall not be used for any other purpose other than that specified. After award (specify) sets of maps/drawings will be furnished to the Contractor without charge.

ANNUAL WORKLOAD ANALYSIS REFRIGERATION AND AIR-CONDITIONING

The total number of Service Orders (SOs) and Individual Job Orders (IJOs) accomplished during (specify fiscal year) is not meant to represent the workload a Contractor would be required to perform during a year of contract performance. The number of SOs was (specify) and IJOs was (specify). It should be understood that each SO and IJO may well have contained multiple tasks of the type described in the following schedule.

The workload shown in the following schedule detailing units, frequencies, and variances represents the tasks upon which the bid must be based.

NOTE_TO_WRITER: This schedule is incomplete and is included as an example of a Technical Exhibit which may be included in SECTION J. Include any information which would be needed by the Contractor in preparing his bid.

| Annual Frequency Code | Description | Unit | Frequency | Variance |
|---|---|---|---|---|
| 1 | Air Conditioner, Check for Serviceability | EA | 27 | +/- 1 |
| 2 | Air Conditioner, Maintain | EA | 12 | +/- 1 |
| 3 | Air Conditioner, Repair | EA | 2,201 | +/- 5 |
| 4 | Compressor, Repair | EA | 89 | +/- 3 |
| 5 | Cooler, Water Repair | EA | 218 | +/- 5 |
| 6 | Dehumidifier, Repair | EA | 6 | +/- 1 |

The historical hours listed below are for informational purposes only; however, the Contractor must consider these factors as a requirement to accomplish the workload shown above.

Travel Time (Historic time used to travel to and from job site)(specify hours)

Surety/Security Delays (Include hours used for processing hazardous work permits, entry to security areas, etc.)(specify hours)

Historically (specify %) of the workload was performed outside normal duty hours.

PREVENTIVE MAINTENANCE FREQUENCY AND TASKS FOR REFRIGERATION, VENTILATION, AND AIR-CONDITIONING EQUIPMENT

FREQUENCY

| Description | Start-up or Shutdown<br>Quarterly or Annually<br>Annually | Monthly | Semi-Annually |
|---|---|---|---|
| 1. Lubrication: Lubricate as required, add lubricant if grease dispenser or oil cup is less than half full, add oil to crankcase of compressor if below correct level and change if dirty, using correct type of lubricants; clean or replace lubricant lines and lines and fittings. | X | X | X |
| 2. Rust and Corrosion: Inspect and correct existence of rust, bare spots, and corroded areas. | X | | X |
| 3. Motors, Drive Assemblies, and Fans: Remove accumulations of dust, dirt, and grease; re-place or tighten worn, loose, missing, or damaged connections and connectors, bent blades, worn or loose belts; correct unbalance, misalignment, excessive noise and vibration, end play of shafts, ineffective sound isolators, poor condition of motor windings and brushes. Do not use abrasives that will wear surfaces. | X | X | X |

| FREQUENCY | | | |
|---|---|---|---|
| Description | Annually | Monthly | Semi-Annually |
| 4. Wiring and Electrical Controls: Tighten loose connections and parts; adjust contact springs; clean contacts. Repair discrepancies. | X | | X |
| 5. Temperature and Humidity Controls: Adjust improper setting; tighten loose connections; clean/correct dirty, pitted or misaligned contacts; check overall operation of control system to include switches, transmitters, receivers, controller, pilot positioners. | X | | X |
| 6. Lubricate and adjust dampers linkage. Clean soot, dirt, dust, and other deposits. Tighten or adjust broken, loose, or missing connections and parts; repair excessive vibration, material defects, defective operation of movable parts, improper seasonal or operating settings of dampers; check and balance air distribution in branch circuits; make adjustments. | X | | |
| 7. Insulation and Vapor Barriers: Inspect to ensure retention of insulation properties. | X | | |

Start-up or Shutdown
Quarterly or Annually

8. Air Filter: Replace throw-away filters as necessary; wash permanent-type filters in solvents; rinse with hot water; store viscous coating in accordance with manufacturer's instructions; service, replace, or repair roll type filters, bag filters, electronic air cleaners. X X

9. Inspect guards, casings, hangers, supports, platforms, and mounting bolts. Tighten loose connections and parts and adjust level; report defective sound isolators and any repairs or replacement needed. X X

10. Pump Units: Clean dust, dirt, and other deposits; adjust loose or missing connections or parts. Inspect for leaks, noise, vibration, and other discrepancies; add pump lubricant or shut down. X X X

11. Piping: Inspect for leaks, corrosion, deformations, material defects of fittings, copper tubing, steel piping. X X X

12. Compressprs: Remove dirt, dust, and other accumulations; tighten loose connections, belts and parts; correct misalignment, check for proper operation. Perform operational task as required in TB 43-0151 - Inspection and_Test_of_Air_&_Other_Gas_Compressors. X X

| Description | Annually | Monthly | Semi-Annually | Start-up or Shutdown Quarterly or Annually |
|---|---|---|---|---|
| 13. Shell and Tube-Type Condensers: Remove dust accumulation; inspect for leaks, including connection to cooling tower. (Internal scale indicated by small difference in temperature of refrigerant and cooling water when taken by mercury thermometer in inlets and outlets). Remove scale accumulations as required. | X | | X | |
| 14. Self-contain Evaporative Condensers & Cooling Tower: Inspect for leaks; adjust float controls; adjust outdoor air flow; clean clogged nozzles; adjust sprays; remove scale; service chemical treatment. | X | X | X | |
| 15. Air-Cooled Condensers: Vacuum, brush or wash; check for leaks; tighten loose connections. | X | | X | |
| 16. Refrigerant Driers, Strainers, Valves, Oil Traps, and Accessories: Clean out strainer baskets; inspect for missing or worn parts, leaks and other defects. | X | | X | |

| Start-up or Shutdown<br>Quarterly or Annually<br>Description | Annually | Monthly | Semi-Annually |
|---|---|---|---|
| 17. Cooling and Heating Coils: Clean out dust or wash particularly between fins, using vacuum cleaner or brush; straighten bent fins; correct level; remove obstructions from air flow; clean or replace filters; make adjustments. | X | X | |
| 18. Fan: Check revolutions per minute, direction and alignment for freedom of rotation. | X | | |
| 19. Coil and Fan Cleanliness: Remove all dirt, lint, oil, and other foreign substances. Inspect for bent or chipped fan blades, other discrepancies. | X | | X |
| 20. Drive Belts and Air Compressor Belts: Check for wear, tension, and replace as required. | X | X | X |

| Description | Annually | Monthly | Semi-Annually | Start-up or Shutdown Quarterly or Annually |
|---|---|---|---|---|
| 21. Meters, Pressure Gages, Indicating and Recording Instruments, Thermometers, and Thermostats: Inspect for leaks, cracked dial-cover glasses, mechanical damage. Check accuracy of thermometers by mercury thermometers; check accuracy of thermostats by sling phychrometer or by wet-bulb or dry-bulb mercury thermometer, make minor repairs. (Minor repairs are those costing less than $50 in time and materials.) | X | X | X | |
| 22. Brine Solutions: Test and adjust. | X | | X | |
| 23. Drain and install anti-freeze on all idle equipment which could be damaged by freezing. | | | X | |

PREVENTIVE MAINTENANCE INVENTORY VENTILATION AND AIR-CONDITIONING (HVAC) SERVICES

PREVENTIVE_MAINTENANCE_FREQUENCY_CODES

Code 1 - PM on Start up/Shut down

PM Monthly during operation of systems and equipment as stated in equipment listing (specify).

Code 2 - PM Monthly and Semi-Annually as stated in equipment listing (specify).

Code 3 - PM on Start up/Shut downPM Monthly during operation while equipment is required to be in operation as stated in equipment listing (specify).

| | | | | PM | |
|---|---|---|---|---|---|
| | | Ton/HP | Operational | Frequency | |
| Building_# | Quantity | Size | Days | Code | |
| 30 | 1 | 100 | 180 | 1 | |
| | 5 | 5 | As_Required | 3 | |
| 120 | 2 | 60_HP | 120 | 1 | |
| | 1 | 15 | 120 | 1 | |
| | 1 | 10 | 120 | 1 | |

| | | | | |
|---|---|---|---|---|
| | 1 | 7_1/2 | 120 | 1 |
| | 1 | 3_Ton | 365 | 2_CTR* |
| | 1 | 7_1/2 | 365 | 2 |
| 300 | 1 | 7_1/2 | 120 | 1 |
| 305 | 1 | 7_1/2 | 180 | 1 |
| 309 | 2 | 40 | 180 | 1 |
| | 1 | 40 | 120 | 1 |
| | 1 | 25 | 180 | 1 |
| | 1 | 25 | 120 | 1 |
| | 1 | 10 | 180 | 1 |
| | 4 | 10 | 180 | 1 |
| | 1 | 3 | 120 | 1 |
| 309-A | 1 | 25 | 180 | 1 |
| | 2 | 10 | 180 | 1 |
| 309-C | 1 | 10 | 180 | 1 |
| 309-E | | | | |

| | | | | |
|---|---|---|---|---|
| Trailer | 2 | 9 Ton | As Required | 3 CTR* |
| 310 | 1 | 50 | 180 | 1 |
| | 1 | 7 1/2 | 120 | 1 |
| 311 | 2 | 10 | 365 | 2 |
| | 4 | 5 | 365 | 2 |
| 314 | 1 | 350 | 200 | 1 |
| 315 | 1 | 3 | 365 | 2 CTR* |

MONITORING OF REFRIGERATION, VENTILATION, AND AIR-CONDITIONING EQUIPMENT AND SYSTEMS

The Contractor shall inspect, monitor, and maintain proper operation, on a daily or weekly basis, the attached Refrigeration, Ventilation, and Air-Conditioning Equipment and Systems. Maintaining proper operation shall include correcting oil levels, noisy operation, temperatures and pressures, etc. Daily, as used throughout this Technical Exhibit is defined as each work day (Monday through Friday).

| | | Ton/HP | | Operational | Monitoring |
|---|---|---|---|---|---|
| Bldg.# | Quantity | Size | Description | Days | Frequency |
| 30 | 1 | 100 Ton | HVAC | 180 | Daily |
| | 5 | 5 | HAVC | As Required | Daily |
| 120 | 2 | 60 | HAVC | 120 | Weekly |
| | 1 | 7 1/2 | HAVC | 365 | Weekly |
| | 1 | 7 1/2 | HVAC | 120 | Weekly |
| | 1 | 10 | HAVC | 120 | Weekly |
| | 1 | 7 1/2 | HAVC | 120 | Weekly |
| 309 | 4 | 10 | HVAC | 180 | Daily |

| | | | | | |
|---|---|---|---|---|---|
| | 1 | 3 | HAVC | 120 | Daily |
| | 1 | 40 | HAVC | 120 | Daily |
| | 1 | 25 | HAVC | 120 | Daily |
| | 2 | 40 | HVAC | 180 | Daily |
| | 1 | 10 | HAVC | 180 | Daily |
| | 1 | 25 | HVAC | 180 | Daily |
| | 1 | 10 | Air_Compressor | 365 | Daily |
| 309-A | 1 | 25 | HAVC | 180 | Daily |
| | 2 | 10 | HAVC | 180 | Daily |
| 309-C | 1 | 10 | HVAC | 180 | Daily |
| 310 | 1 | 50 | HAVC | 180 | Weekly |
| | 1 | 7 1/2 | HAVC | 180 | Weekly |
| | 1 | 1/4 | Air_Compressor | 365 | Weekly |
| 314 | 1 | 200_Ton | HAVC | 365 | Daily |
| 316 | 2 | 10 | HVAC | 120 | Daily |
| | 20 | 7 1/2 | HAVC | 365 | Weekly |
| 321 | 2 | 15_Ton | HVAC | 120 | Daily |

| | | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | Air Compressor | 365 | Weekly |
| 322 | 1 | 50 | HAVC | 200 | Weekly |
| 327 | 1 | 10 | HAVC | 120 | Daily |
| 328 | 2 | 7 1/2 | HVAC | 180 | Daily |
| | 5 | 20 Ton | HAVC | 365 | Daily |
| | 6 | 18 Ton | HAVC | 365 | Daily |

| Bldg.# | Quantity | Ton/HP Size | Description | Operational Days | Monitoring Frequency |
|---|---|---|---|---|---|
| | 1 | 1 | Air Compressor | 365 | Weekly |
| 330 | 1 | 20 | HAVC | 120 | Weekly |
| | 1 | 25 | HVAC | 120 | Weekly |
| 331 | 1 | 100 | HAVC | 180 | Weekly |
| 342 | 1 | 50 | HVAC | 200 | Weekly |
| | 1 | | Air Compressor | 365 | Weekly |
| 359 | 1 | 80 Ton | HAVC | 120 | Daily |
| | 1 | 3 Ton | HAVC | 365 | Weekly |

Date _____ AIR-CONDITIONING SHUT DOWN ENERGY SAVINGS

The Contractor shall provide input for Columns 3-7

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| Bldg | HP | Hours_Off | Time_on | Time_off | $_Saved | KWH_Saved |
| 30 | 100 | | | | | |
| 120 | 120 | | | | | |
| 310 | 45 | | | | | |
| 314 | 300 | | | | | |
| 324 | 60 | | | | | |
| 327 | 30 | | | | | |
| 330 | 25 | | | | | |
| 331 | 100 | | | | | |
| 339 | 40 | | | | | |
| 359 | 80 | | | | | |
| 360 | 55 | | | | | |
| 367 | 55 | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 392 | 175 | | | | | |
| 393 | 125 | | | | | |
| 400 | 75 | | | | | |
| 459 | 170 | | | | | |
| 860 | 50 | | | | | |
| 2401 | 150 | | | | | |
| 2407 | 30 | | | | | |
| 2501 | 300 | | | | | |
| 2503 | 30 | | | | | |
| 3024 | 50 | | | | | |
| 3070 | 60 | | | | | |
| 3073 | 90 | | | | | |
| 3074 | 60 | | | | | |
| 3144 | 50 | | | | | |
| 3147 | 100 | | | | | |
| 3148 | 100 | | | | | |
| 3240 | 30 | | | | | |

LIST_OF_MAPS/DRAWINGS

NOTE_TO_WRITER: Include site drawing(s) that show all activity buildings, housing area(s), recreation facilities, and other areas where the Contractor is to provide service. Maps and drawings are property of the Government and shall not be used for any other purpose other than that specified. After award (specify) sets of maps/drawings will be furnished to the Contractor without charge.

GOVERNMENT-FURNISHED_PROPERTY

NOTE_TO_WRITER: List all facilities that are to be provided to the Contractor. Provide descriptive characteristics and provide simple drawings of each facility showing Contractor areas, areas retained for use by the Government, etc. List all equipment and materials that will be provided to the Contractor. Provide descriptive characteristics including manufacturer, model, type, age, condition, size or capacity, etc.; and provide specific equipment maintenance requirements, if any, beyond the general requirements specified in SECTION C. Materials that are to be provided should be identified by generic name, Federal or commercial specification, and quantities of issue. Indicate how it is to be provided to the Contractor, i.e., Contractor pick-up or Government delivery to Contractor site.

GOVERNMENT-FURNISHED_PROPERTY

1. Facilities:

| Building | Sq._Ft. | Use |
|---|---|---|
| 1 | 209 | Warehouse |
| 2 | 1,751 | Admin/Maint |
| 3 | 195 | Admin |
| 4 | 65 | Storage |

2. Equipment:

| Type | Manufacturer | Capacity | Quantity | Location |
|---|---|---|---|---|
| Generator | Cummings | 200 KW | 1 | Bldg 2 |
| Furnace | Rheems | 10,000 BTU | 2 | Bldg 1,3 |
| Space Heater | Rheems | 5,000 BTU | 1 | Bldg 4 |

SECTION K

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REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF BIDDERS

1. Information: The Contracting Officer is responsible for preparing SECTION K. Included in this section are those solicitation provisions that require representation, certifications, or the submission of other information by bidders.

NOTE_TO_WRITER: The PWS writer should recommend any special certification requirements required from a Contractor. If no special certification requirements exist, then omit.

2. Instructions: The PWS writer should provide the Contracting Officer with any recommendations for special certification requirements, technical skills, experience, and necessary organization.

3. Example: The PWS writer needs: a certified licensed Boilerman with a class (specify type) certification, or lets say you need licensed pests control personnel that meet Federal, State, local requirements that are certified applicators IAW the requirements of DoDD 4150.7.

SECTION L

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INSTRUCTION, CONDITIONS AND NOTICES TO BIDDERS

1. General_Information: The Contracting Officer is responsible for preparing SECTION L. This section will contain provisions and other information and instructions not required elsewhere to guide bidders. Provisions that are incorporated by reference shall be included in this section (see FAR Subpart 52.102-1(c). Invitations shall include the time and place for bid openings, and shall advise bidders that bids will be evaluated without discussions
(see FAR Subpart 52.214-10).

2. Instructions: The writer should provide the Contracting Officer with any recommendations for special instructions, conditions, and notices to bidders not required elsewhere, which will affect preparation and submission of his bid. The following should be brought to the bidder's specific attention:

a. Directions for obtaining copies of any documents such as plans, drawings, and specifications that have been incorporated by reference.

b. Any requirements for samples or descriptive literature.

c. Instructions with respect to disposition of drawings and specifications supplied with the request for proposals or request for quotations.

d. Statutory cost limitation, if any.

e. A statement covering special technical capabilities that the offerer must possess.

f. Bid conference dates, times, locations, etc.

g. If a utilities contract is included, instructions to complete, sign, and return with the bid.

h. Instructions to submit technical proposals in severable parts to meet agency requirements to include:

(1) Separation of technical and cost or pricing data.

(2) Further organization of proposal or quotation parts.

SECTION M

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EVALUATION FACTORS FOR AWARD

1. General_Information: The Contracting Officer is responsible for SECTION M. This section identifies the price related factors, other than the bid price that will be considered in evaluating bids and awarding the contract (see FAR Subpart 14.201-8).

2. Instructions: The PWS writer should provide the following type of information to the Contracting Officer if appropriate:

a. Factors other than price (including technical proposals or quotations requested), which will be given paramount consideration in the awarding of the contract, when an award is to be based upon technical and other factors. In addition to price or cost, the solicitation must clearly inform bidders of one (1) the significant evaluation factors, and two (2) the relative order of importance the Government attaches to price and all related factors. Numerical weights, which may be employed in the evaluation of proposals, must not be disclosed in solicitations.

b. Statements of information required to enable evaluation of technical and financial capabilities.

c. Any information pertaining to evaluation and award when first article approval is involved (Ref: FAR Subpart 9.3).

d. Identification of special factors, such as Government costs or other expenditures, including reliability and maintainability requirements, which must be considered in the evaluation of proposals or quotations.

NOTE_TO_WRITER: Unsatisfactory Contractor performance can often be prevented by a proper technical evaluation.